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ORIGINAL COMMUNICATIONS.

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NEW METHODS OF TUNING-FORK TESTS AND THEIR PRACTICAL SIGNIFICANCE.*

BY DOCENT DR. ROBERT BARANY, VIENNA.

(Translated by Dr. M. A. Goldstein, St. Louis.)

It is generally known that the Schwabach and Rinné tests are frequently subject to faulty findings and that various examiners have often been led to directly opposite conclusions thereby. These fallacies depend, first, on the examiner, second, on the person examined, and, third, on the external surroundings.

Concerning the first possibility of fallacy: (a) The intensity of tone in testing bone conduction is largely dependent on the amount of pressure with which the stem of the tuning fork is held against the mastoid process; even the practiced examiner will not always be able to apply the same pressure of the fork under such circumstances, and different examiners will record diversified results with the same test. (b) With even pressure the intensity of tone is dependent on the point over the mastoid process where the stem of the tuning fork is applied.

In the second consideration: (a) The denser the soft parts covering the mastoid process, the weaker the tone intensity of the tuning fork applied with even pressure and fixed point of application. (b) With even pressure and fixed point of application the amount of tension of the soft parts plays an important role in this test. If the skin is made tense over the mastoid, the tone of the tuning fork is immediately intensified. (c) If the cartilage of the

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auricle is touched with the tuning-fork applied over the mastoid process, or with the end holding the fork, the tone is at once intensified.

The third factor: (a) External noise is an important feature of consideration in all hearing tests, because of an over-tone blending of delicate sounds, and also because of diverting the attention of the patient. Rooms or cabinets especially devised for acoustic tests are at the disposal of but few clinics or private consulting rooms.

A great many of these errors can be avoided by my method of tuning-fork tests. The first method establishes impairment of sound conduction; the second method determines disease of the internal ear. The principle of this method is that the patient's ear and that of the examining physician are connected by a rubber tube, thus permitting the physician to hear the same sounds that are used in testing the patient, so that it is no longer necessary to apply the tuning-fork alternately to the patient's and to the examiner's ear. The entire test is made upon the patient.

The fundamental principles underlying this method are: (1) to the examiner the condition of the middle and internal ear of the patient during auscultation is immaterial, whether the sound of the tuning-fork is conducted by air, cartilage or bone. Let us assume that the ear of the examiner is connected by the auscultation tube with the ear of a patient of normal hearing; if now an electrically stimulated tuning-fork of continuous and even tone be held to the mastoid process of the patient, and if during the course of this examination the patient acquire an impairment of sound-conduction, the auscultating examiner, should find no difference in tone-intensity. Neither should the auscultating examiner find, if a sudden impairment of sound-conduction occur in the ear of the patient, a difference in sound-intensity, whether the tuning fork be held to the auricle of the patient or to the auscultation tube connecting the ear of the examiner with that of the patient. This observation is based on the fact that to the examiner an increase or decrease of the sound-intensity depends only secondarily upon changes in the membrana tympani or of the ossicular chain of the patient. The first fundamental fact therefore serves primarily to determine impairment of sound-conduction, for it is self-evident that where diseases of the internal ear are present the auscultating examiner will be unable to notice any difference in the sound-intensity.

The second fact upon which the method depends is the following: If the ear of the examiner is connected with the ear of a pa-

tient of normal hearing and a sounding tuning-fork is held to the mastoid process of the patient, a tone of equal duration should be heard by both examiner and patient; if anything, the patient should hear the tone somewhat longer than the examiner. Under no circumstances, however, will the examiner hear the tone longer than the patient.

If an impairment of sound-conduction is present in the ear of the patient, there will be no material change for either patient or examiner in testing bone-conduction for the examiner, because of the first-mentioned fundamental principle, for the patient, because the closing of the ear by the auscultation tube produces the same effect as an impairment of sound-conduction, namely, an abnormally increased bone-conduction. There is a limit to the generalization of this observation in that some patients with impaired sound-conduction appreciate a decrease in bone-conduction of a sounding-fork when the affected ear is closed by means of the auscultation tube. By auscultation, therefore, an apparently diminished bone-conduction of the patient may be observed; this error, however, is easily eliminated. An actually shortened bone-conduction has thus far in my experience occurred only in disease of the internal ear. For these tests I use a Politzer middle tuning-fork pitched between *d* and *e*. The tests may also be made with higher or lower pitched tuning forks. The only precaution to be observed is that the tuning-fork shall not cease vibrating too soon, for gross errors may result.

To determine the impairment in hearing it would perhaps be more effective to use an electrically-stimulated tuning-fork of continuous and even tone-intensity, but this fork must be freely movable. I am at present engaged in the construction of such a fork. The auscultation tube is an important factor; its thickness and size make no material difference, but its length is of importance.

I made the following test: I attached three rubber tubes to a T-shaped brass tube; to either end of the horizontal part of the T I attached the tubes connecting the ear of the examiner with that of the patient. Tube 1 leads to the ear of the examiner and is 66 cm. long, and is $\frac{3}{100}$ of the wave-length from *d*; tube 2 leads to the ear of the patient and is $\frac{1}{10}$ of the wave-length from *d*; tube 3 is attached to the vertical end of the T, is 88 cm. long, is $\frac{4}{10}$ of the wave-length from *d* and serves especially to determine whether the other tubes are fitted air-tight in the respective ears. After careful tests I have determined on the above several tube-lengths because, when the tuning-fork is held to the rubber tube near the au-

ditory meatus of both examiner and patient, a sound of almost equal intensity is heard by both when the third tube is also closed at its end. These experiments cannot be said to be absolutely accurate, though for practical purposes they suffice and I hope to make accurate examinations with the electrically stimulated tuning-fork.

The tests for making a diagnosis in impairment of sound-induction is as follows: Each of the rubber tubes that passes respectively to the auditory canal of the examiner and patient is fitted with an air-tight olive-shaped tip. The examiner exhausts the air in the third tube by producing suction with his mouth. If either of the rubber tubes is not inserted air-tight, the examiner hears the air-leak as a bubbling sound. When the tube fits air-tight, the examiner hears the movements of his own membrana tympani. It sometimes happens that the olive-shaped tip slips out of the ear of the patient, in which case the patient must hold it in place. After determining that both rubber tubes are inserted air-tight, I (the examiner) close the end of the third tube with a finger of the left hand, or I permit the patient to do this. I begin by striking the tuning-fork. To verify this test, I select a person with normal hearing.

To determine the impairment in sound-conduction I can compare cartilage-conduction with bone-conduction, or the sound heard in the rubber tube and bone-conduction. Except in rare cases, both tests yield the same results. I shall first describe the method of comparing cartilage-conduction with bone-conduction. I hold the stem of the tuning-fork firmly to the aural cartilage and then place it lightly over the mastoid process. Both examiner and patient hear the sound more intensely when the fork is in contact with the auricle. Then the sounding-fork is pressed firmly over the mastoid and then touched lightly to the auricle. Both examiner and patient now hear the vibrating fork more intensely via the mastoid process. I can modify the intensity of the sound that is heard by way of the mastoid process or of the auricle by change in the pressure. Both patient's and examiner's findings coincide. After some training with this test, I can modify the pressure so that the sound via the auricle and the mastoid process may be heard of equal intensity. The person of normal hearing will also detect no difference in sound intensity. If I can determine these conditions for middle and low-pitched tuning-forks, then there is certainly no impairment in sound-conduction. An existing impairment in hearing, therefore, must be due to an affection of the internal ear. If an impairment of the sound-conduction apparatus exists, this test

will give different results. For the examiner it remains the same; for the patient there is a definitely shortened cartilage-conduction, but bone-conduction remains unchanged. Consequently, when the examiner hears the fork equally loud when applied both to the mastoid process and the aural cartilage, the patient will hear this sound much louder via the mastoid process. Even though the examiner hears the tone louder via cartilage, the patient hears it louder via mastoid process. The diagnosis of sound-conduction impairment is established in the divergence in the respective statement of the patient and examiner. The greater the impairment in sound-conduction the greater will be the divergence in the respective findings. In the most extreme cases of impaired sound-conduction even the firmest pressure of the fork on the auricle, or the lightest touch on the mastoid process will not cause the sound to be more intensely appreciated by the patient via the auricle. Conversely, the slightest impairment of sound-conduction may be determined in that the sound for the patient appears somewhat louder via the mastoid process, while the same sound appears equal to the examiner via both mastoid process and cartilage. There are cases of impaired sound-conduction of such slight degree that these findings can be demonstrated only by means of the lowest-pitched tuning-forks while the middle-pitched forks are heard normal. Unilateral and marked affections of the internal ear must show errors in results with this test. In such a case the normal bone-conduction of the healthy ear produces an apparent increase of bone-conduction over cartilage-conduction and may thus allow a diagnosis of impairment of sound-conduction to be made. Such a diagnosis can be definitely excluded only when the low-pitched forks can still be normally heard. Heretofore the differential tests have been insufficient to determine whether in such cases an affection of the internal ear or an affection of the internal and middle ear existed. In place of comparing cartilage and bone-conduction, rubber tube and bone-conduction can also be compared. The tuning-fork is held to the rubber tube, or better still, is applied to the band that holds the tube, as more delicate shadings of tone; intensity can be observed. Both methods gave me the same results, excepting in cases of small, non-marginal perforations of the ear-drum. In the above-mentioned cases cartilage-conduction is better than the conduction through the rubber tube, for which, as yet, we have no explanation.

The test for diagnosis of affections of the internal ear is as follows: The preparations are like those in the previous test. The

tuning-fork is applied to the mastoid process of the patient with the direction to indicate when he no longer hears the sound. The latter circumstance may result from fatigue of the auditory nerves. For this reason the tuning-fork is removed for a second and immediately replaced. If the patient again hears the sound which in the meantime has not diminished for the examiner, the cause for the interruption in the patient's sound perception was due to fatigue. This procedure of removing and replacing the tuning-fork is continued until the patient finally hears no sound.

If the examiner continues now to hear the sound, then an affection of the internal ear is indicated, provided an impairment of the bone-conduction apparatus had previously been excluded. In case there is an impairment in bone-conduction, it is possible that the closure of the ear has produced a diminution in tone-intensity via bone-conduction. The olive-tipped plug is now withdrawn from the ear, and the patient directed to notice whether he again hears the sound. If this is not the case, then the already established lessening in bone-conduction points to an involvement of the internal as well as the middle ear. If the patient, after removal of the olive-tipped plug, again hears the sound, with tuning-fork still sounding, the plug is reintroduced. If only the examiner now hears the sound, the diagnosis of involvement of the internal ear is established.

In conclusion I wish to enumerate the advantages of the new method over the old:

1. By means of the new method we are able to determine the slightest impairment in bone-conduction, even in those cases where the Rin   and Schwabach tests are unreliable.
2. We are able in cases of deafness due to a combination of middle-ear and labyrinth disease, to establish the diagnosis of deafness due to labyrinth involvement, which by the old method was impossible.
3. By the new method we need not consider the amount of pressure with which the tuning-fork is applied.
4. In applying the tuning-fork to the mastoid process we are independent of the point of contact.
5. Due to the fact that the ears of the patient and examiner are connected by a tube with an air-tight tip, both are uninfluenced by external noises, which is of value in a clinic where there is constant activity.
6. The new methods of diagnosis may be executed rapidly, which means a saving of time for the physician.

7. As the statement of the patient is necessary, the new method is not entirely objective. On the other hand it approaches far nearer an objective examination because of the constant control which the examiner exercises through his personal perception of the sound, a fact of especial value in cases of simulation.

8. Even a defective hearing on the part of the examiner is not an obstacle in diagnosing affections of the middle ear. In order to determine diseases of the inner ear, it is only necessary that the examiner fix the time of his diminished hearing perception by comparing it with that of a normal-hearing individual by the test via the mastoid process.

Widening of Palatal Arch. L. W. DEAN. *Journal A. M. A.*,
March 20, 1909.

In this paper Dr. Dean calls attention to a class of patients in whom, with normal turbinates and only slight septal deflection, there is still obstructive breathing, and in whom the operation required is not on the nose but consists of widening the palatal arch. It has been his custom to send all his younger patients suffering with interference in nasal respiration to the dentist, and in his opinion this should always be done. Even if the palatal arch is not constricted there may be other conditions requiring attention which, if received, may save the patient great annoyance in years to come. He has found considerable difficulty in measuring in the living patient the increase in size of the nares by the widening of the palatal arch. There is no question, however, but that it occurs. With the widening of the nose and consequent increase of nasal respiration the turgerence of the mucosa in constricted noses is relieved and the condition still further benefited. In order to ascertain what actually occurs he had Dr. G. V. I. Brown of Milwaukee widen the arch of a green skull, and he gives in detail the measurements before and after the operation. These show an average widening on each side of from 1 to 1.5 mm. The figures, he thinks, speak for themselves. He has had patients who exhibited as much and similar improvement after widening of the palatal arch as others have shown after removal of adenoids.

**SYMPTOMS OF INTERNAL EAR SUPPURATION WITH
REPORT AND PRESENTATION OF TWO CASES;
OPERATION; RECOVERY.***

BY JOHN MCCOY, M. D., NEW YORK.

The internal ear is invaded by suppuration as a result of acute or chronic suppuration in the middle ear and mastoid. It is much more frequently, however, a sequel to chronic suppuration. The infection spreads to the internal ear, either by direct extension through the oval or round windows, or along the inter-communicating blood vessels of the middle and internal ear, or by a gradual erosion of the bony capsule of the internal ear at the promontory or semi-circular canals. The suppurative involvement of the internal ear may affect the cochlea alone or the vestibular apparatus alone, and the infection in each may be circumscribed; or the cochlea and vestibular system may be involved together.

When the end organs of the vestibular branch of the auditory nerve are invaded by the suppurative process, there occurs at first the symptoms of irritation of this nerve, which are vertigo and nystagmus. The nystagmus is directed toward the diseased side. As the inflammatory process advances the endorgans of the vestibular nerve lose their function in a very short time and the spontaneous nystagmus is then directed to the opposite side. The vertigo and the disturbance of equilibrium continue for several days, and the patient, unable to maintain the erect position, lies on the side toward which the nystagmus is directed; as in this way he minimizes the subjective sensations of the nystagmus. These sensations may be described as follows: If there is destruction of the right labyrinth with spontaneous nystagmus to the left, the patient in the erect position complains of vertigo, of apparent turning of objects to the left, and with eyes closed, the sensation of apparent turning of the body to the left. Rhemberg's test, however, shows that the patient really falls to the right. The patient falls opposite to the direction of the nystagmus. When looking in the direction of the nystagmus these subjective sensations become materially increased, and when looking away from the direction of the nystagmus the subjective sensations are materially minimized. Therefore the

*Read before the Section on Otology, N. Y. Academy of Medicine, October 8, 1909.

patient lies in bed on the side toward which the nystagmus is directed, because in looking up from this position he is looking opposite to the direction of the nystagmus, and is decidedly more comfortable. After several days the symptoms moderate in severity, the subjective symptoms disappear, and the vertigo is only experienced when the head is turned quickly. After ten or fifteen days, if nature has thrown up a protecting barrier for the brain, the spontaneous nystagmus disappears, and the vestibular apparatus passes into a state of latent destruction. This condition can be detected by the absence of reaction to the caloric and turning tests.

If only a circumscribed portion of the vestibular apparatus is involved, the patient will at first pass through the symptoms of vestibular irritation and later the caloric and turning tests will show a much diminished excitability of the affected labyrinth, and a reaction to the fistula test. These patients are the subjects of attacks of vertigo, which may be of two types. Either the attack comes on without apparent cause, is severe and prolonged to half an hour or more, with nystagmus during the attack; or, the vertiginous attacks may be mild and last but a few seconds and are apparently brought on by some external factor, such as bending the head, smoking or drinking.

When suppuration attacks the cochlear branch of the auditory nerve, the symptoms are not so clearly defined. At first there comes the symptom of irritation, tinnitus, and later that of destruction, deafness. But it is not always easy to determine if the tinnitus and deafness are the result of purulent inflammation in the labyrinth, or in the middle ear. The hearing tests help but little. However, if the patient, a subject of middle ear suppuration, says that a great increase in, or complete deafness appeared suddenly, and that this was accompanied by symptoms of vestibular irritation, then if the functional tests show the vestibular apparatus to be normal, we can assume a purulent inflammation of the cochlea. If the cochlear and vestibular branches of the auditory nerve are both involved in the suppurative process, there results a combination of the symptoms just described, as produced by irritation and destruction of each.

The ultimate diagnosis, however, must be based on the observation of these symptoms, together with the pathological condition found at operation. In other words, the absence of deafness does not necessarily mean that the cochlea is not involved, as at operation it may be found to have a fistula leading into it with extensive destruction, and apparently there had been good hearing. Or again,

a patient with a slowly eroding cholesteatomatous process may have passed through the stage of irritation and destruction of the vestibular endorgans, and the symptoms have been so slight as to have been attributed to some other cause. However, here we can rely on the tests for vestibular function to determine its condition.

In conclusion, the writer would urge that in every case of chronic suppuration in the middle ear, and especially before operative procedures are undertaken, that a thorough test of the functioning condition of the cochlear and vestibular branches of the auditory nerve be made.

REPORT OF CASES.

Case I.—Gaetane M——, male, aged 25 years. Occupation, barber; came to the New York Eye and Ear Infirmary on April 2, 1909, and gave the following history: He had had a purulent discharge from the left ear since childhood. On March 23, 1909, he felt as if he had taken cold and took a Turkish bath. On March 24 he had a severe headache. March 25, on awakening he was very dizzy, could not stand up, and vomited. From March 25 to April 2, he felt more or less dizzy all the time. On entrance to the hospital, April 2, examination of the left ear showed the following condition: Membrana Tympani destroyed; fundus contained granulations and foul-smelling pus. The tuning fork was lateralized to the right, the voice was heard three feet from the ear, and the bone conduction was minus. The turning test showed right vestibular apparatus normal; left vestibular apparatus not functioning. The caloric reaction was positive in the right ear, negative in the left ear. Compression of the air in the left ear produced, at first, nystagmus toward the left side, and on rarefaction, toward the right. Temp. on admission was 97.4 F., pulse was 100, resp., 20. April 2, 1909, the radical mastoid operation was performed, thoroughly exposing the middle ear and mastoid. A fistula was found in the external semi-circular canal containing granulations and pus, and a probe passed into the fistulous opening penetrated to the vestibule. The semi-circular canals were then removed and the first turn of the cochlea uncapped. The wound was packed in the usual manner and left open to dress from behind. The patient went on to recovery, epidermitization being complete in about twelve weeks.

Case II.—Timothy H——, aged 6 years, was brought to the hospital on July 30, 1909, with the following history: Five days before coming to the hospital he complained of pain in the left ear

and such dizziness that he could not stand when he attempted to get up. Both ears had been discharging for the past five years. The dizziness and disturbed equilibrium continued up to the time of entering the hospital. Examination July 31, 1909: Right ear partially filled with pus, membrani tympani thickened and perforated in inferior part. Left ear contains foul-smelling pus, drum destroyed, granulations in fundus, some tip tenderness. He hears in left ear a forced whisper at nine inches. Weber test indefinite. Bone conduction minus. Well-marked spontaneous nystagmus to the right. An attempt at the Caloric and Fistula tests was made, but the child was so frightened that it was impossible to carry them out. The turning reaction he took to very kindly, and the result showed *after-nystagmus* from turning to left, which lasted for thirty seconds, and which indicated a normally functioning right labyrinth. In turning to the right ten times there was absolutely no *after-nystagmus*, which indicated disease in the left vestibular apparatus.

July 30, 1909, a radical operation was performed, thoroughly exposing the middle ear and mastoid. A fistula opening of good size was found, leading into, and opening both the horizontal and posterior semi-circular canals and extending to the vestibule. The pus in the fistula was extremely foul, and examination of it showed pneumococci and a bacillus resembling bacillus pyocyaneus. The semi-circular canals were removed and the first turn of the cochlea uncapped. The wound was packed and left open behind for dressing. Under the usual dressings the boy has progressed to recovery.

No. 157 West Seventy-third Street.

The Tonsils as Eliminative Organs. W. W. ASHHURST. *Amer. Jour. of the Med. Sci.*, July, 1909.

The author speaks of the various theories which have been advanced as regards the functions of the faucial tonsils. He believes their function is to eliminate toxins from the tissues. In support of this, he advances the well-known clinical phenomenon of the appearance of manifestations on the tonsils some days after the other signs of the disease have been present in cases of scarlet fever and diphtheria.

PACKARD.

MASTOID OPERATION, SIMPLE AND RADICAL, UNDER LOCAL ANESTHESIA.

BY E. W. DAY, M. D., PITTSBURGH.

It was formerly my custom in patients in whom an acute or chronic disease contra-indicated general anesthesia, to instruct the anesthetist to give as little of the anesthetic as necessary to control the patient. I noticed that these partially anesthetized patients undergoing the mastoid operation gave no evidence of pain while the bone work is in progress, but would immediately struggle or moan or cry out when the soft parts were being cut or operated upon.

The problem of local anesthesia in the mastoid operation, therefore, narrowed itself down to anesthesia of the soft parts, including the periosteum.

Upon looking up the literature on the subject I found that Neuman had demonstrated that injections of violet-colored solutions under the periosteum over the frontal sinus of rabbits was followed by penetration of the solution through the bone to the lining mucous membrane, and that he had applied the results of his experiments to the mastoid operation. Now, while I do not regard the penetration of the bone by an anesthetic solution as by any means necessary, because of the slight amount of sensitiveness of the bone, the method as a whole is exceedingly satisfactory.

It is probable that there is little penetration in the ivory-like, sclerosed bone of long standing chronic suppuration; but in these cases the bone is not sensitive. On the other hand, in the cases where normal cells have to be penetrated, the field is well anesthetized by the penetration of the subperiosteal injection. So that we get in both classes of cases a degree of anesthesia that in the vast majority of cases is so satisfactory to the patients that, when they have been operated upon by both methods, they prefer the local.

In cases of subperiosteal abscess, only the skin and soft parts can be anesthetized and the abscess may be opened just as any other abscess.

Bone anesthesia cannot be obtained because no subperiosteal pressure can be obtained to force the solution into the bone channels. Yet in these cases the pain is not great, and is easily borne in adults, and even in older children.

The risks of general anesthesia in the presence of diabetes, lung, and kidney diseases, is well known to you all.

After using the local anesthesia in a number of this class of cases, I found it to possess so many advantages that I have been led to apply it to many cases in which there is no contra-indication to general anesthesia.

There is a great saving of time, fully ten minutes in acute cases and twenty minutes in radical operations, in the actual performance of the operation, not including the time saved in the anesthesia itself. In the latter there would be probably as much more saved. The economy of time in the execution of the operation itself is owing to freedom from hemorrhage and the fact that the facial ridge in a radical can be much more rapidly worked down upon.

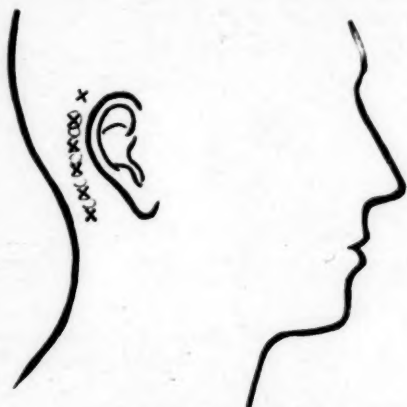


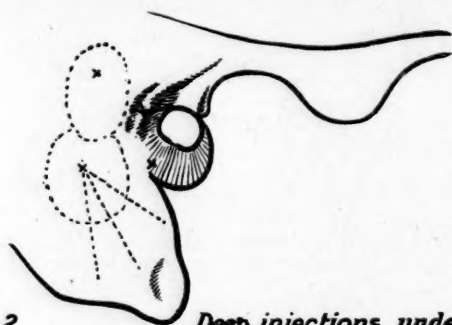
Fig. 1 *Superficial injections
along line of incision.*

Warning is given in twitching of the face much earlier in local than in general anesthesia.

We all know that there is a certain, though slight, risk in general anesthesia. In a patient of fairly robust constitution, with sound heart, lungs and kidneys, this risk is very slight. In the majority of such patients, however, the operation could be done almost painlessly with a great saving of time; not only the time required to put the patient under, but also the time saved by a practically bloodless field. Much time is wasted in sponging away the blood during a mastoid operation, that could be saved by the lessened hemorrhage produced by cocaine and adrenalin injected for local anesthesia.

Another great advantage of the local method is the lessened discomfort and especially the freedom from nausea experienced by the patient after the operation. This is most appreciated, and best understood by the patient who has previously taken a general anesthetic. In many of the uncomplicated cases I permit the patient to walk from the operating room.

The matter of temperament does not enter into the subject in the way one might suppose. The large full-blooded type of man who looks able to stand anything, will complain more than the frail, nervous woman, who perhaps has required much persuasion to get up to the point of permitting a trial of the local method. A number of patients have made me promise that I would use a general anes-

**Fig 2**

***Deep injections under
periosteum***

thetic if they found the pain too severe, but as yet I have never had to resort to a general anesthetic to complete the operation.

I always have black coffee given the patient just as he goes upon the table.

In technic I have followed, with slight modification, that of Neuman. The solution I have used is a one per cent cocaine solution, with the addition of about a dram of adrenalin solution to the ounce. The quantity used being one to two drams. For the skin surface an ordinary hypodermic syringe is best, while for the subperiosteal work a heavier one, such as an antitoxin syringe, is used.

It is essential that all preparation of the field of operation be made beforehand, as scrubbing, or pressure after injection is objectionable.

The points of superficial injection along the line of incision, are shown in Fig. 1. After this the antitoxin syringe is used to inject

under the periosteum, three-quarters of an inch behind the auricle and then into the tendon of the sternomastoid muscle, as shown at Fig. II. Then an injection is made under the periosteum of the canal, though it is sometimes impossible to get anesthesia because the fluid escapes from under the periosteum at the inner end of the canal. This is especially likely to happen if the periosteum has been raised by the burrowing of pus or cholesteatoma.

In about five to ten minutes after the injection the parts should be sufficiently anesthetized to begin.

For the radical operation the method is the same; but in addition cocaine crystals are applied to the Eustachian orifice with a cotton swab.

The soft parts should be touched as little as possible, and it is especially necessary to avoid pinching the soft parts between the

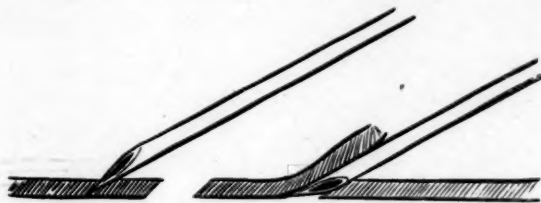


FIG. 3 *Rock over 1/4 turn to lift point out of bone.*

bone and the instrument or hand, or between the blades of forceps. Normal salt solution should be used for irrigation through the antrum.

The following cases will give a good idea of the usefulness of the method. It will be noted that it was used in two cases of pulmonary tuberculosis, one of cardiac disease and three of pneumonia.

In such cases as these, operation under general anesthesia is almost out of the question and the tendency of the profession has been to delay or even actually advise against any operation. All such cases may be operated upon safely by local anesthesia.

The question as to the influence of the local method of anesthesia upon healing is certainly demonstrated by the results in these cases. In only one was there the slightest difference noted in the healing as compared to cases operated upon under general anesthesia. In all the radical operations there was primary union. In one case

there was slight necrosis of the soft tissues, but whether due to the infiltration or not, it was of no consequence. The healing was not long delayed and the final result was perfect. In two cases there was edema of the face, and in another there was a mild cellulitis of the neck, but as these often occur, they could not be attributed to the local anesthesia.

It will be noted that with one exception the anesthesia was sufficient to perform the operation with but slight pain, and in some instances there was absolutely no pain. In one case the patient complained frequently of pain; but afterwards said that if it had to be done again he would prefer the local anesthesia.

In all, forty-four mastoidectomies were performed under local anesthesia in thirty-nine individuals; thirty-five for simple mastoiditis, two being double. Nine radical operations, including three double radicals. The sinus was explored twice and the cerebellum once. These include all ages from five years up, all conditions of life, and many different nationalities.

Westinghouse Building.

Radiography of the Mastoid Region. S. IGLAUER. *Jour. A. M. A.*, September 25.

After employing radiography for diagnostic purposes in the mastoid region, Dr. Iglauer publishes brief notes of a number of cases thus examined, with remarks. His conclusions are stated in substance as follows: The most satisfactory Roentgen pictures can be obtained in profile, the rays centering just below the parietal eminence on one side of the skull and directed through the cranium toward the temporal bone on the opposite side, the internal anatomy of which can be thus determined prior to operation to the great assistance of the surgeon. Osteosclerosis of the mastoid secondary to chronic suppuration can usually be diagnosed in this way, and it is likely the defects in the limits of the temporal bone will appear in the radiogram. Cases failing to heal after operation should be controlled by skiagraphy, as this may reveal the seat of the trouble. The value of the Roentgen examination in cases of acute mastoiditis remains to be determined. The article is illustrated.

INTRANASAL DRAINAGE OF THE FRONTAL SINUS.*

BY E. FLETCHER INGALS, M. D., CHICAGO.

Without discussing the merits or demerits of other operations for the cure of suppurative frontal sinusitis, I wish to call the attention of the profession again to the operation that I have devised for this purpose, because many Laryngologists do not understand it, and because I believe it to be a valuable advance in the management of the majority of these cases. I think this operation is applicable in about 95 per cent. of all chronic cases of suppuration of the frontal sinus. It may be in more than this, for in thirty-one consecutive cases, I have only found one in which it did not fulfill every indication that could have been met by the external operation.

My various articles on this subject have excited some unfavorable criticism, but so far as I know all of it has been based on more or less theoretical grounds, and all of it has been from men who had never done the operation, or who had never even seen it done. I fully appreciate the anatomical difficulties that have been pointed out and am familiar with the anomalous conditions that are sometimes found.

When I wrote an article on this subject for The American Laryngological, Rhinological and Otological Society, presented in Boston in June, 1905, I had operated in this way only a few times, but since then I have done it on a considerable number of patients, and with each succeeding operation I find myself more and more impressed with its desirability from the patient's standpoint, and with its efficiency as a curative measure.

I read a paper which was published in the Journal of the American Medical Association, May 9th, 1908, p. 1502, that was based on 22 cases, in which I expressed great confidence in the operation. Nine similar operations since that time, all successful, go to confirm the views I then held. My larger experience has resulted in some change in the technic and in slight modification of the instruments.

The operation consists of passing a steel probe through the nasofrontal duct into the frontal sinus and running in over the probe a burr with a hole through its axis which compels it to follow the

*Presented to the Section of Laryngology, International Medical Congress, Budapest, September, 1909.

probe. The burr enlarges the canal to 6 m.m., the probe keeps it in the right course and prevents it from going too far, as the probe projects as far beyond the burr as the operator wishes, and it is impossible for the burr to approach any nearer to the end of the probe. A self retaining globe tube is then inserted into the enlarged canal and allowed to remain there about four months, by which time the canal has been lined with mucous membrane so that it will not contract after the tube is withdrawn. The instruments and technic were so fully described in the article just referred to that it is unnecessary to go again into detail, excepting where modifications have been made.



Figure I. Actual size. At the top is shown the tube open; at the extreme left, part of a capsule which is to cover it for introduction; between this and the tube the actual size of the tube, and at the right, the size and shape of the lower end of the tube. Below, the tube is shown with the capsule applied ready for introduction.



Figure II. Three-fifths size; shows the probes, or pilots, and handle. (a), represents the normal curve; (b), an extreme curve that is frequently needed.

In making the diagnosis and ascertaining the location and direction of the naso-frontal duct, I have used a sterling silver canula 10 c.m. in length and 1.2 to 1.5 m.m. in diameter attached to a 4 c.c. syringe; but recently I have had made a canula of the same size, the proximal 2-3 of which is made of sterling silver tubing that will not bend easily, and 3 c.m. of the distal end of virgin silver, which is much more pliable. This portion of the tube is so pliable that with very gentle pressure it may be made to follow a duct that it would be difficult to locate with a stiffer instrument. This canula is carefully removed so as not to change the shape and then a stiffer canula or probe may be introduced by giving it the same curve.

When the canula has been introduced, the air in the syringe can be forced into the sinus, which should cause pus to appear in the naris. In some cases swelling of the mucous membrane lining the naso-frontal duct so reduces its calibre that the canula cannot be introduced at first. In such cases I charge the syringe with a small quantity of a solution of 10 per cent. cocaine in 1-2000 of supra-renaline, and, introducing the canula as far as practicable, inject about half a minum every minute or two for a short time, with the result of reducing the swelling so that in most of the cases the canula will finally pass through the duct.



Figure III. Three-fifths size; above is shown the hollow burr, but in the more recent instruments the blades are not serrated as shown in this cut. Below is shown the spiral tube shield which is placed over the shaft of the burr during the operation and which is also used with the applicator in introducing the tube.



Figure IV. About one-half size. Applicator.



Figure V. About one-third size. Packer.

In acute inflammation of the frontal sinus the swelling will not infrequently prevent the introduction of the canula or probe. Most of these cases will be relieved by removal of the anterior end of the middle turbinated body, combined with the local application of suitable quantities of cocaine and suprarenalin; others will be relieved by the local remedies alone, or associated with analgesics; many would be relieved by Bruening's electrical head bath recommended by Prof. Killian, and a very few will require external opening of the sinus.

In quite a percentage of cases of suppurative frontal sinusitis it will be difficult to pass a probe into the naso-frontal duct without

first removing the anterior end of the middle turbinated body. Removal of this obstructing part will be sufficient to cure quite a large percentage of these patients, and this is necessary in most cases where operation is done on the frontal sinus whether internally or externally, therefore, this preliminary operation is nearly always desirable, although there will be found a few exceptions. By anaesthetizing the part thoroughly and using suprarenalin freely at the same time, it is usually possible with a long-bladed speculum to press the middle turbinated body against the septum so as to allow room for free manipulation in introducing the canula or probe into the frontal sinus.

When there is but little time it is generally best to make the diagnosis by introducing the probe and getting a radiograph the same day. On the following day the anterior end of the middle



Figure VI. About one-half size. (a), shows guard in position by which the burr is carried up over the pilot into the frontal sinus; (b), the burr.



Figure VII. Three-fourths size. Small rubber bulb for medicating sinus.

turbinated body may be removed and the frontal sinus operation done at once.

In cases where the probe passes easily, and where, from the position of the naso-frontal duct we are satisfied that there would be no danger in enlarging it, the operation may be done without hesitation; but in other cases a probe should be introduced, and while it is in position, a careful X-ray examination should be made. In some cases a flouroscope examination will be sufficient, but in the others lateral and frontal radiographs should be taken. For the lateral view the plane of the forehead and the direction of the rays must be at right angles (or perpendicular) to the plate, and for the frontal view the forehead should rest on the plate and the rays should be directed on a plane from the occipital protuberance to the supra-orbital ridges.

In some of the chronic cases, owing to the irregular position of the opening of the frontal duct into the hiatus similunaris, into the infundibulum or into a fronto-ethmoidal cell, it may be found impossible to pass the probe into the frontal sinus. It is generally assumed that when a bent probe has been passed into what appears



Figure VIII. From retouched negative showing drainage tube in position in the left frontal sinus and canula in position in the right frontal sinus.

to be the naso-frontal duct so far that the distance from the lower inner angle of the nostril to the distal end of the probe is 6.3 c.m., the end of the probe must be in the frontal sinus. This is not a safe rule; but if the distance is 7.5 to 8 c.m., and if about 2.5 c.m. of the end of the probe has been carried upward and forward above the nasal orifice of the naso-frontal duct, it will nearly always be in the frontal sinus.

The radiograph will enable the operator to know where the end of the probe is. In one cadaver I found the naso-frontal duct opening into a fronto ethmoidal cell in such a way that a probe could not have been passed from the naris into the frontal sinus at all; but in all of my operations I have not found one where the difficulty of passing the probe could not be overcome. In four or five cases

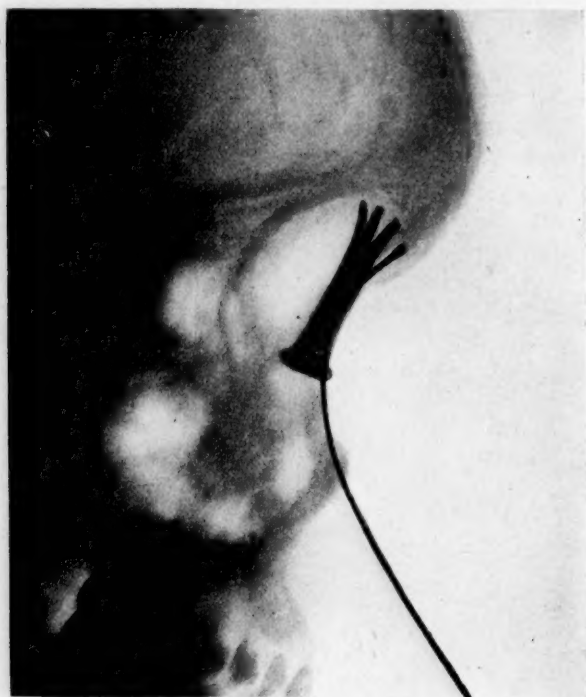


Figure IX. From retouched negative lateral view taken from the same patient at the same time as Figure VIII. In this exposure the probe did not show distinctly in the radiograph where it was overlying the drainage tube, but the shadow was faintly traced.

it has been found impracticable, before the operation, to pass the probe into the frontal sinus, as its end would be caught in a fronto-ethmoidal cell. In these cases I felt sure that no harm could be done by passing the probe into the cell and then running the burr in as far as possible. Having done this the duct from the cell, which probably was a part of the naso-frontal duct, or which received the

latter, or which was at least, located in juxtaposition to it, was so much enlarged that the probe could be manipulated freely and passed into the frontal sinus without difficulty. The burr was then run over the probe into the frontal sinus safely and the operation was quickly completed.

In every one of forty-two successive cases of chronic suppuration of the frontal sinus I have been able to pass the probe into the frontal sinus, although it has sometimes taken me more than an hour to do so, and in the four or five cases just referred to I was obliged to enlarge the lower portion of the duct before I could succeed.

The burr has blades running spirally which turn about 1-4 of the way around its circumference. As first made, these were also cut with another spiral groove, whereby serrated edges were given to each blade, to make the instrument feed faster. This has been found unnecessary, and as the teeth interfere with the use of the guard, occasionally employed, and as they would make the instrument more likely to cut the dura, if perchance the tabula interna should be absent, the burrs are now made without serrated blades.

Owing to the fear expressed by some critics that the burr would sometimes cut through the wall of the sinus and open into the brain cavity, I have made a shield with which the burr can be pushed up, that will prevent it from cutting backward. Other shields of similar form may be used to prevent it from cutting laterally, if the radiogram should make this appear desirable. I have tried this shield several times on the cadaver, but only once on the living subject. It worked well in all these, but not as smoothly as the burr without it. Another method for preventing the burr cutting too far posteriorly, I have found to work well in some cases where some precaution seemed necessary to prevent injury to the tabula-interna. It consists of attaching a strong thread to the distal end of the spiral tube-shield that surrounds the stem of the burr when it is in operation. By making traction on this thread the burr is made to do nearly all the cutting at the anterior part of the naso-frontal duct.

In the majority of cases a probe with a curve of about fifty degrees may be passed into the naso-frontal duct. This I have called the normal curve. The applicator, the tube and the packer are all fashioned on this curve, and they cannot be changed for different cases, therefore it is necessary that the drainage canal into the frontal sinus should have the same curve. I keep one steel probe with the normal curve; but in some cases it will be found necessary

to make a much greater curve in order to pass the probe through the naso-frontal duct. In such cases the burr is run in over the pilot with the greater curve; a pilot with the normal curve is then introduced, and the burr is run in again. This makes a canal that the tube and other instruments will fit. In all cases the burr is run in and out over the pilot two or three times to be sure that the canal is smooth and large enough for the tube. Only about one drachm of blood is lost in the operation. As soon as the drilling is finished the naris is smeared with vaseline, carried in on a pledget of cotton, the packer is then introduced and through it is run a strip of one-inch gauze saturated with a 20 per cent. solution of chloride of zinc, a strong mixture of carbolic acid, or some other mild cautery. Recently I have decided to use a liquid produced by rubbing together 60 per cent. of camphor and 40 per cent. of carbolic acid. This is an analgesic and an efficient bactericide, but it does not cauterize. The gauze with the disinfecting solution is allowed to remain in the sinus about five minutes, the packer is then withdrawn about 1.5 cm., and a little more gauze pushed gently through it for the purpose of making the application thoroughly to the drainage canal. The gauze is then withdrawn through the packer so that the solution will not get on much of the usual mucous membrane.

Nothing can safely be blown into the sinus after the operation, and the patient must be cautioned not to blow the nose for three or four days, because of the danger of forcing air into the cellular tissues about the eye. Such an accident would cause a good deal of pain, ecchymosis, and danger of suppuration.

The patient is then ready for the introduction of the self-retaining tube. I used gold tubes in twenty-nine cases, but in the thirtieth employed a tube of the same form, equally springy, and that was claimed to be noncorrosive. This is made of an alloy consisting of nickel 75 per cent., copper 20 per cent, iron 5 per cent. It is somewhat cheaper than gold and appears to answer the purpose just as well. The spring ends of the tube should first be bent back so as to open about 1.3 c.m., they are then brought together by winding about them a light rubber strap, and then a No. 2 gelatine capsule is slipped over them and the rubber strap removed, the tube, with the capsule, is then immersed in 95 per cent carbolic acid and directly afterward in alcohol and then dried. The capsule is then dipped for an instant in melted parafine with a melting point of 110 degrees F. This covers the gelatine with parafine so that it will not be quickly dissolved by the nasal secretions. This spiral shield

is then placed on the applicator and the tube is slipped over the end and carried up into the frontal sinus. With the spiral tube shield it is held while the applicator is being withdrawn. A probe is then passed up through the tube to break the capsule, which then quickly dissolves, and the operation is finished.

I have usually packed the naris to prevent secondary bleeding, but would prefer not to do this if the patient was where he could be watched. We have never had bleeding following the operation, and I think it probable that the insufflation of a couple of grains of pulverized matico into the naris (not into the tube) would be a sufficient safeguard against hemorrhage. When packing is used it should be removed the next day. The patient is given a small silver Eustachian catheter bent to the proper curve with a two ounce rubber bulb for washing out the sinus and a two drachm bulb for medication. Each of these have attachments to fit the catheter. It is easy for the patient to find the metal drainage tube with the catheter if the latter is marked so as to show the proper distance for it to be inserted into the nose.

Not much washing or medication is needed, as the tendency is to recovery when free drainage has been established, and irrigation are sometimes harmful.

In conclusion, I may well quote with slight modifications from the article referred to in the beginning of this paper. The series of thirty-one cases that I have presented contains four or five that were not heard from afterward, or that on account of extensive atrophy or syphilis could not be used in estimating the ultimate results of the operation; but in every case the operation itself was done without any unfavorable result, and in every instance it established free drainage, although in one of them in which an external operation was subsequently done by another surgeon, abundant purulent discharge continued long afterward, and I think a Killian operation was indicated. Analyzing all the cases that could fairly be considered, I believe that the following conclusions are justifiable:

This operation leaves no scar, whereas the scar from the external operation often causes a serious deformity, and one which cannot always be safely remedied by injections of paraffine; because this procedure sometimes causes sloughing, it has been followed by malignant Keloid-like growths in several instances, and by death in some cases.

This operation usually incapacitates the patient for only one or two days at most.

It is done under a local anaesthetic, a general anaesthetic being used only in rare cases, and then chloride of ethyl or some other agent that will cause anaesthesia for only two or three minutes is sufficient.

It can be done in about 95 per cent. of all chronic cases, and in the majority of acute cases, provided the anterior end of the middle turbinated body has first been removed.

The middle turbinated body should be removed in practically all cases of frontal sinusitis, whether suppurating or not, in order to insure free drainage, which of itself is often sufficient to cause a cure.

As a factor of safety the flouroscope, and X-ray negatives, should generally be used with the probe in position in the frontal sinus, in order to assure the surgeon of the relation of the nasofrontal duct to the surrounding parts. We should not place too much reliance on the radiograph in making the diagnosis of frontal sinusitis, for if the sinus were absent one might easily be deceived by the shadow. In the examination of fifty skulls, I found no frontal sinus on either side in 4 per cent. In 4 per cent. it was absent on one side, and in 6 per cent. it was very small on one side; thus in 14 per cent. the radiograph would have pointed to suppuration where it did not exist.

In many cases suppuration of the antrum of Highmore is associated with empyema of the frontal sinus, and in all such free drainage must be established from the antrum, preferably through the inferior meatus into the naris. Suppuration of the ethmoid cells is frequently associated with frontal sinusitis, but this operation will open the adjoining cells sufficiently in the majority of cases. Suppurating cells not opened by it should be given free drainage by the usual methods.

Experience has shown that the canal left by this operation is as large as desirable, and that the drainage is ample and remains so. This was true in all of my cases, even in the one that was not materially improved by the internal and the external operations.

Frequent washing out of the frontal sinus after the operation is not desirable in most cases, although for a time it should be washed at least once daily to prevent the tube from becoming closed by dessicated secretions.

Washing of the frontal sinus with peroxide of hydrogen even in weak solutions is unsafe even where there is very free drainage.

I believe this operation as safe as any other that has thus far been described for treatment of suppuration of the frontal sinus.

It is very doubtful whether the burr used in this operation could cut the dura in any case, no matter how it was applied against it. Exposure of the dura in the frontal sinus would seem no more dangerous than that occurring in operations for suppuration of the mastoid, in a large percentage of which this exposure occurs.

This operation will surely establish free drainage even in some cases of empyema, in which it may not be sufficient to effect a cure. In cases that do not greatly improve within a few weeks, the frontal sinus should be opened externally and cleaned out. The enlarged drainage canal resulting from the intranasal opening of the sinus would allow free drainage into the nose and would lessen the danger from the external operation.

Healing is apparently as rapid after this as after any other operation on the frontal sinus. Probably 95 per cent of all suitable cases will practically recover within from two weeks to six months.

Although reinfection may occur with attacks of severe cold in the head, the suppuration will soon cease, because the free drainage is permanent, therefore, obliteration of the frontal sinus is very rarely needed, and if not necessary it is undesirable.

I believe that an operation for intranasal drainage should be first chosen in practically all cases of empyema of the frontal sinus, and that the operation I have suggested, for this purpose, is the easiest both for the patient and the surgeon, and is as safe as any of the other operations thus far described.

5540 Woodlawn Avenue.

Brain Abscess of Nasal Origin. DONALIES. *Arch. f. Ohrenh.*, Vol. 75, Heft 3, 1909.

In a boy of 12, who had fallen upon his forehead, a swelling appeared over the root of the nose. There was pain in the head, temperature 102°, and a bloody discharge from both nostrils coming from under the middle turbinated bones.

The swelling on the forehead was opened, and contained pus. Both frontal sinuses contained pus. A week later convulsions appeared on the left side. The right side of the brain was explored through the frontal sinus but without result. On the left side, however, a sub-dural abscess was evacuated and a small abscess in the brain itself was also found and emptied. Recovery.

YANKAUER.

A CASE OF RHINOSCLEROMA.

BY ALFRED BRAUN, M. D., NEW YORK.

T. T., an Italian bricklayer, 27 years of age, was referred to me by Dr. Pietrafesa, of Portchester, in May, 1909, with a history of complete right-sided nasal obstruction for the past three and a half years, with occasional nose-bleed. He comes from Calabria, the Southern part of Italy. He has been in this country seven years.

Examination showed the right naris to be filled with a mass, which presented at the nasal orifice. The right ala was displaced outward, and the nasal bones were enlarged.

The mass was composed of a number of grape-like masses, not unlike mucous polypi, although they were more reddish, and firmer than these. They were of about the consistency of tonsil tissue. The mass bled very easily when it was touched. It was impossible to tell from what part of the nose the mass sprang. The septum was pushed over to the left, and was joined to the left inferior turbinate by means of a broad synechia.

There were a number of fibrous adhesions in the naso-pharynx, between the septum, posterior end of the left inferior turbinate, and the orifice of the left Eustachian tube. The mouth of the tube was entirely closed in, yet there were no disturbances of hearing in the left ear. The oropharynx and larynx were normal.

There were no glandular enlargements. The patient's general condition was good. There was no history of syphilis.

A mass of tissue large enough to fill a vaseline bottle was removed from the right naris, and found to spring from the floor and outer wall of the nasal cavity. The bleeding was very profuse, but was controlled by gauze packing.

The tissue was examined by Dr. F. M. Jeffries, from whom the following report was received:

"DR. A. BRAUN,
"Polyclinic.

"New York, May 19, 1909.

"Dear Sir: It is my belief that the nasal growth received from you is a lympho-sarcoma. I should like to know more about the case, however. Respectfully, F. M. JEFFRIES."

The patient was then referred to Dr. W. Freudenthal, to be treated with radium. Before beginning the treatment, Dr. Freu-

denth removed another piece of tissue, and sent it to Dr. Jonathan Wright for examination. Dr. Wright reported that the tissue examined showed no evidence of sarcoma, but was probably syphilitic. It showed a connective tissue hyperplasia, with round cell infiltration, especially marked around the small blood-vessels.

The patient was put upon increasing doses of iodide. He did not bear the iodide well, and it was impossible to get him to take more than forty drops, three times a day. The condition showed no signs of improvement, under this treatment.

In September, another piece of tissue was removed, and sent to Dr. Wright for examination. This specimen showed the same changes as the last.

The condition remained stationary until the end of October, when a granulosomatous mass began to spring up from the floor of the nasal fossa. This was removed, and sent to Dr. Wright. A culture was made from the blood at the site of the mass, and also sent to Dr. Wright, from whom I received the following report:

"Nov. 22, 1909.

"Pieces of tissue more recently examined showed a decided difference in the morphological appearance of the granuloma, which, by the first report, was thought probably to be syphilis. The amount of round cells was decidedly increased in proportion to the fibrous stroma.

"While in this respect it bore a closer resemblance to round-cell sarcoma, the arrangement of the intercellular framework, the condition of the nuclei, finally the clinical course fully confirmed, indeed strengthened, the assumption that the growth was not of a neoplastic, but of a granulosomatous nature of inflammatory origin. In the bits of tissue alluded to, there were numerous large mononuclear cells, apparently lymphocytes, whose cytoplasm had undergone hyaline degeneration. So numerous were they, that in face of the report that antisyphilitic treatment long continued had been of no avail, in spite of the absence of vacuole cells and their bacterial contents, the tentative diagnosis of Rhinoscleroma was made. Shortly after this, still further bits of tissue were removed, which presented the vacuole cells in large numbers. At the time the last piece was removed, a culture was made from the blood flowing at the point of the incision and a pure culture of the Frisch bacillus was obtained, showing upon various media the characteristic morphological variations and cultural appearances.

"Hence a diagnosis of Rhinoscleroma seems unavoidable.

JONATHAN WRIGHT."

Rhinoscleroma is not very common among Italians. Most of the cases seen here, are in Russians, Poles, and Galicians. No case has yet been seen in a native-born American. To judge from this patient's history, his disease developed in America, as he has been in this country for seven years, and has had nasal symptoms for only three and a half years. However, it is likely that the disease extended a good deal farther back, with symptoms too slight to be noticed by the patient, as the disease is one with a very insidious onset, and a very slow chronic course. In support of the assumption that the disease lasted longer than three and a half years, is the enlargement of the nasal bones, which is a fairly, late symptom.

The patient is at present receiving radium treatment from Dr. Freudenthal.

156 East Sixty-first Street.

Anatomical and Anatomo-Pathological Researches on the Nervous Terminations of the Intrinsic Muscles of the Human Larynx. F. BRUNETTI, *Italino Archi. Laryng.*, No. 2, 1909.

After having spoken briefly of the story of the argument with which till now, few have been occupied, the author explains the technique used in the researches made on the human larynx. He has found that the best method is that of Loevit Fisher with the bath of gold and reduction in solution of prussic acid. In researches of normal histology the author could put in evidence the following interesting facts, namely: That there exists a nervous net that is superficial and another less superficial; one nervous fibre terminates in one muscular fibre; the termination has the shape of a little button, or net work, or a small pill. In the termination exists the deepest amyelinic part; the superficial part, the amyelinic, is formed by small branches. He never found anastomosis among the terminations. There are two sorts of the nuclei, those of the amyelinic portion, oval dark, and those of the terminal portion of a reniform appearance, in part granulous and in part the so-called fundamental belonging to the bladder, containing a clear substance. The granulous substance has a slight misty appearance formed by small transparent grains.

LASAGNA.

A RAPID AND THOROUGH METHOD OF OPENING INTO THE MAXILLARY ANTRUM IN SELECTED CHRONIC CASES.

BY OTTO J. STEIN, M. D., CHICAGO.

In cases of maxillary sinus involvement where it is desirable and necessary to obtain a large communication between the sinus and nasal cavity, experience has frequently shown, first, the difficulty of removing a large section of the naso-antral wall easily and quickly; second, that a small opening closes before drainage is completed; third, that many of the methods of operating are too complicated, require much time, and a large number and often expensive instruments. These objections all have been met with to some degree, and therefore a procedure that minimizes these difficulties is welcomed.

The conditions best suited for this particular method of operating are, first, those cases of chronic suppuration of the antrum that have resisted conservative methods of treatment, and, second, cases that demand a thorough exposure of the cavity in order to obtain accessibility for the removal of polypi, granulations, cysts,



Figure 1.

cholesteatoma, etc., that may be within. In luetic involvement of the antrum cavity or the naso-antral wall it is at times desirable to remove a part of this wall. In malignant conditions of the antrum cavity or the lower turbinate it is particularly desirable to employ a method of operating that is rapid and radical.

The instrument used for performing this operation is so shaped as to adapt itself to the curvature of the outer wall of the nasal cavity. In general outline it somewhat resembles the shape of a spoon, cut off and notched in a V at the end. The longitudinal bend adapts it to the naso-antral wall, and favors a curved direction in driving the instrument backward. The lateral curvature gives adaptability and control by preventing slipping. The V, the ends of which are pointed and the edges sharp, facilitates the perforation and cutting of the bony wall. The instrument has a strong handle and large grip.

Where the lower turbinate alone is to be operated a part or all can be removed with equal ease. To do this the notched end of the instrument straddles the turbinate at its anterior end, or at any place along the turbinate desired. By pushing backward, aided

at first, if necessary, by a few light blows of a mallet, the sharp edges of the V plow the turbinate from its attachment to the antral wall, and by directing the handle to one side or to the other the amount of turbinate to be removed can be regulated to a nicety.

If a large opening into the antrum is desired one of two procedures may be followed. First: For an opening with removal of part or all of the lower turbinate. Enter one point of the V, with the concavity of the instrument directed towards the floor of the nose, just within the pyriform process of the antral wall, driving backward and outward until the sharp point perforates into the antrum cavity, then, with the instrument still in situ, depress the handle and push backward, this gives a gentle upward curve through the thin bone of the middle meatus region, one blade of the V being in the antrum and the other in the middle meatus. As you progress backward gradually elevate the handle so as to direct the cutting V downward in the direction of the lower turbinate again, passing through it at any part the operator may select. Remove the instrument and re-enter at the point of first incision, but



Figure 2.

with the handle elevated and the concavity directed upward; thus forcing the instrument below the turbinate, one blade of the V being in the antrum and the other one in the lower meatus. Gradually depress the handle so as to force the cutting V to follow as close to the floor of the nose as the thickness of the bone at this part will permit, causing it finally to meet the incision from above at the selected spot. The oval piece of bone made up of turbinate and naso-antral wall is removed with forceps en mass. Second: For an opening without removal of turbinal tissue. Enter one point of the V through the naso-antral wall of the lower meatus, namely, below the inferior turbinate, at a point as high up under its anterior attachment as possible. Push backward, keeping the cutting V as high as can be. When the desired length of incision is reached remove the instrument and reintroduce at the beginning, only direct the cutting V as close to the floor of the meatus as possible, driving backward to meet the first incision above. By using two instruments, with one leg of the V longer than the other, this latter operation is made easier, the longer leg being the one to perforate into the antrum.

A CASE OF SQUAMOUS CELLED EPITHELIOMA OF THE ANTRUM OF HIGHMORE.*

BY ANTONIE P. VOISLAWSKY, M. D., AND ALFRED BRAUN, M. D., NEW YORK.

On April 12, 1909, H. C., aged 37 years, assistant foreman of construction gang, was sent to me by Dr. Goodwin of Tompkinsville, Staten Island, N. Y., complaining of inability to breathe through the left nostril. Examination showed occlusion of the left nostril due to polypi. Operation was at once performed, a number of polypi being removed. Specimen removed was sent to Dr. Hensel. Report typical polypoid tissue. Patient returned several weeks later, and again several small polypi were removed. Patient not again seen until July 26, when his condition was as follows:

The left side of the nose was occluded, and there was a copious purulent discharge from that side. Occasional bleeding. There was marked exophthalmos of the left eye. The eye was displaced forward, and slightly upward. Slight restriction of mobility of the eye, in all directions. Diplopia in end positions of the eye. Some congestion of the conjunctiva. There was also some edema and tenderness over the left upper jaw, and a feeling of numbness and tingling in the upper jaw.

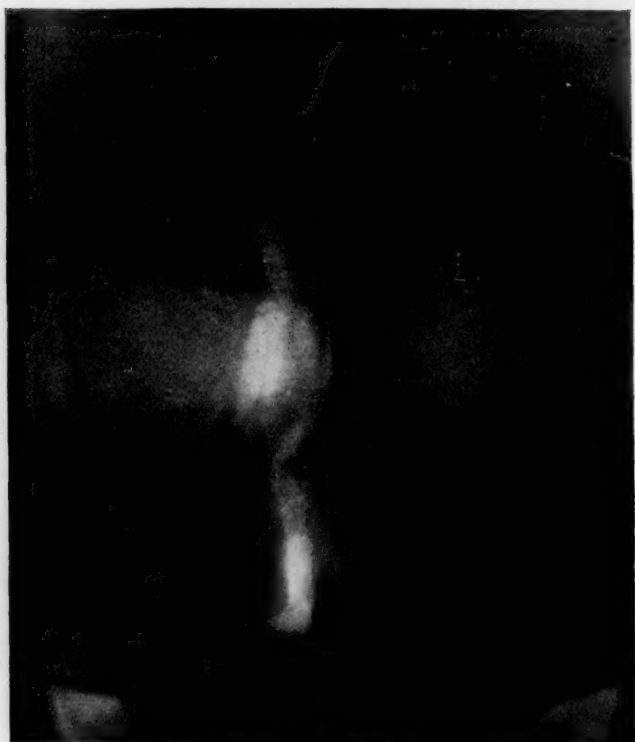
Examination of the nose showed considerable pus in the left nasal cavity, with some polypi in the region of the middle meatus. Removal of the polypi caused considerable hemorrhage. It was possible to pass a canula into the frontal sinus, through the nasofrontal duct. A large quantity of very foul-smelling pus was washed out. A trocar was passed into the antrum through the inferior meatus. It entered with very little resistance. The washing returned clear. The fact that there was edema and tenderness over an antrum that contained no pus, together with the presence of exophthalmos raised a suspicion of malignancy in the antrum.

The polyps which were removed from the middle meatus, were examined by Dr. I. Seff, and pronounced to be typical polypoid tissue, without any sign of malignancy.

An X-ray picture was taken by Dr. E. W. Caldwell. It showed disease in the frontal and ethmoidal cells on the left side, and also a shadow in both antra.

*Read before the Laryngological Section, New York Academy of Medicine, November 23, 1909.

It was decided to do a Killian operation. This was done at the Manhattan Eye, Ear and Throat Hospital, on August 10, 1909. A large frontal sinus, reaching almost to the outer margin of the orbit, was found, full of thick, creamy, fetid pus. The mucous membrane lining the frontal sinus was thickened and edematous. The ethmoidal cells were full of pus and polypoid tissue. There was



no evidence of any tumor tissue, whatever, in the frontal or ethmoidal cells. There was nothing in the frontal or ethmoidal cells to explain the exophthalmos, the orbital walls of these cavities being intact.

The antrum was next exposed, by the canine fossa route, and upon elevating the periosteum, it was seen, that there was an erosion on the facial wall, about an eighth of an inch in diameter. The

entire facial wall of the antrum was taken down, and it was seen that the antrum was full of a soft tumor mass, of about the consistency of granulation tissue. This was removed with a curette, and it was found that a large part of the naso-antral wall was eroded. The tissue removed from the antrum was examined by Dr. Jonathan Wright, and pronounced to be a squamous-celled epithelioma.

The frontal sinus and ethmoid healed without incident. The exophthalmos gradually receded, after the operation, so that after a month, it was scarcely noticeable.

Owing to the fact that the facial wall of the antrum was found to be eroded, at the time the Killian operation was done, it was thought that the soft parts of the cheek were already involved, and that consequently, a resection of the superior maxilla did not offer much hope of cure. After several weeks, another piece of tissue was removed from the antrum, through the opening in the canine fosa, and examined by Dr. Hensel. The report was squamous-celled epithelioma. The case was then seen by Drs. Harmon Smith and George Brewer, and it was decided to remove the superior maxilla.

On October 16, at the Roosevelt Hospital, Dr. Brewer did a preliminary ligation of the external carotid artery, on the left side. He then made the usual skin incision for the resection of the superior maxilla, and upon reflecting back the soft parts, it was seen that the soft tissues of the cheek were infiltrated, and that the disease had extended beyond the limits of the upper jaw. The incision was sewed up, and the patient put back to bed.

At present, the patient is feeling perfectly well. He has no symptoms referable to his antrum, except that there is some edema over the cheek, and slight exophthalmos of the left eye. He is now receiving serum injections from Dr. Hodenpyl, at the Roosevelt Hospital.

DISEASES OF THE ACCESSORY SINUSES CAUSING OCULAR SYMPTOMS.

BY F. E. WAXHAM, M. D., DENVER, COLO.

Tumors of the accessory sinuses are of more common occurrence than is usually credited. Even benign growths as well as inflammatory diseases may give rise to the most alarming eye symptoms. They may lead to blindness or even death if not recognized and properly treated.

While diseases of the nasal sinuses not infrequently give rise to serious ocular symptoms, yet the relation between them has not been properly recognized until the last few years. In the Ophthalmic Year Book for 1907 no mention is made of sinus disease in connection with the etiology of certain ocular lesions, excepting a very simple reference to a case of retro-bullar neuritis, associated with empyema of the frontal and ethmoidal sinuses reported by Zentmeyer. Since then many cases have been reported.

To emphasize the importance of recognizing diseased conditions of these sinuses I would simply allude to the case of a prominent physician in Chicago, who rapidly failed in health, was practically incapacitated for work and by many was supposed to be afflicted with a fatal illness. Indeed, he manifested many of the symptoms of locomotor ataxia. Fortunately one of the leading rhinologists of his city recognized the condition as an indication of sphenoidal disease. Upon freely opening and curetting this sinus and evacuating the contained pus, all the symptoms at once abated and permanent relief was afforded.

Many of the growths and diseased conditions of the nasal sinuses are easily recognized, while others are obscure and the diagnosis can be made only by exclusion and operation. The most common complication of tumors of the accessory sinuses is that pertaining to the eye, especially when the frontal or ethmoidal cells are involved. In case of forward protrusion of one eye we should at once suspect the presence of pus or a tumor in the posterior ethmoidal cells, and when these cells are diseased the sphenoidal cells are as a rule also involved. If the eyeball is pushed outward as well as forward, either the anterior ethmoidal cells or the frontal sinus or both may be the seat of the disease. These sinuses, however, may be diseased without any disturbance of the normal axis of the eye.

When there is severe pressure as from confined pus in the anterior ethmoidal cells, a small hard tumor appears at the inner angle of the eye, which gradually increases in size and may in time become fluctuating. When the frontal sinus is the seat of pressure the small tumor or swelling appears at the inner and upper angle of the eye. It must be remembered that pus is not always seen in the nasal cavities when the sinuses are involved, from the fact that their outlets may be closed, and hence the difficulty of diagnosis.

In this connection I wish to acknowledge my indebtedness to Dr. F. A. Davis for his courtesy and help in looking up the literature of this subject. One of the most important contributions to this subject is that of Birch-Hersfeld. He states that the boundaries of the optic canal vary much in different cases. They may be as thin as paper, or several mm. thick. Dehiscence has been frequently observed.

Hajek and Onodi have observed that often the posterior ethmoidal cells are in relation to the optic nerve, in which instances the separating wall is always thin, also the connection of the venae ethmoidalis with the ophthalmic vein is very important.

Onodi writes: "The present teaching of intracranicular inflammation of the optic nerve is very defective," and urges the ophthalmologist and rhinologist to work together.

Birch-Hersfeld believes that affections of the optic nerve arising from the posterior sinuses are not of rare occurrence. Usually, he states, only one nerve is affected, but bilateral cases have been reported. Careful determination of the visual field reveals central scotoma in the majority of cases, which is relative for red and green in moderate cases, but absolute in the more severe. Narrowing of the outer limits of the visual field has also been observed. Optic neuritis is frequently present. The shrinking of the field follows no set rule. Sometimes it is in the periphery and sometimes in the central part. Birch-Hersfeld's conclusions are that inflammatory diseases or tumors in the posterior ethmoidal cells lead early to severe damage to the optic nerve. This damage is first seen as a central scotoma, the recognition of which is very important as the diagnosis of disease of the posterior cavities is often difficult.

Differential diagnosis from toxic amblyopia is easily made from the fact that it is monocular, acute in development and has a tendency to progress rapidly. Posey states that until the sinus is opened it is impossible to determine the extent of the cells involved, and in the event of extensive disease the skill and resources of both ophthalmologist and rhinologist will be taxed to bring the case to a

successful issue. He also states, "the cases of sinus involvement of which there is the greatest need of a clear understanding by ophthalmologists, are mucocoeles of the cells."

The first symptom to attract attention is the displacement of the eyeball. As a rule there is no pain, the history being that of a slow but progressive increase of the swelling extending over a period of years. The nasal examination may be negative. Posey urges the necessity of early surgical treatment in these cases and reports a case of mucocoele of the ethmoidal cells, where the prominence of the left eye had been getting more and more pronounced for some time. Ophthalmoscopic examination of the right eye was normal, but the nerve in left eye was somewhat hyperemic, and the retinal vessels were full and tortuous. Vision and visual fields were normal. The patient was referred to a rhinologist, who advised operation, which was declined. Three years later the patient came under observation again. He had been in a hospital, where sarcoma of the orbit had been diagnosed.

At this time the affected eye was still more prominent. The optic nerve was pale, and both arteries and veins were full and distended. Absolute scotoma. The patient was delirious at the time of the operation. The posterior ethmoidal cells were opened and drained, being full of a gelatinous viscid fluid. Both anterior and superior walls of the sinus were absent, and dead bone present in the roof. The patient died the day following with symptoms of meningitis. No sarcomatous tissue was found and the diagnosis was that of sinusitis originating from a mucocoele of the posterior ethmoidal cells.

According to Posey the inflammation of the frontal cells gives rise most frequently to intracranial lesions, the infection occurring as a result of perforation of the posterior wall of the sinus, with consecutive abscess of frontal lobe. The infection in ethmoiditis occurs through the lamina cribrosa and is rapid, meningitis or frontal abscess resulting. Meningitis and thrombosis may also be set up by sphenoiditis and less frequently by disease of the antrum.

Arnold Knapp reports two cases of optic neuritis, one bilateral, due to disease of the posterior ethmoidal cells. In one case there was sudden dimness of vision, nausea, frontal headache and scotoma. All symptoms, including vision, rapidly improved after removal of the middle turbinated body, and the opening and drainage of the posterior ethmoidal cells. In this case the cells contained pus, although there was no discharge previous to the removal of the turbinated body.

In the second case the eye symptoms occurred one month subsequent to a severe cold in the head and consisted of headache, pain about left eye, followed the next morning by blindness in that eye. Upon examination the pupil of the left eye was smaller than that of the right eye and unresponsive to light. There was no light perception. Optic neuritis distinct. On examination of nose the middle turbinates were found to be enlarged and boggy. Patient stated that she had no unusual discharge from nose, but upon cocaineizing the region about the left turbinate some pus was seen in the upper meatus. Dr. Coakly operated upon the patient and removed the middle turbinate, finding it cystic and containing muco-pus and thickened lining membrane. Pus continued to escape from the ethmoid cells for some time, but gradually ceased under antiseptic irrigations. The eye symptoms entirely disappeared and vision became normal. Six weeks later the same condition occurred in the right side of the nose, with like symptoms in right eye, although milder.

Paunz (Budapest) reports four cases of mucocoele of the accessory sinuses. In two of these cases the rhinological examinations were normal, but operation upon and drainage of these sinuses gave entire relief to severe eye symptoms. He believes these mucocoeles to be due to retained secretions from obstruction of the outlets of these sinuses.

Snellen (Utrecht) reports a case of total loss of vision in one eye and hemianopsia in the other, with choked disc, due to inflammation of the accessory sinuses, entirely cured with return of normal vision in both eyes, by operation upon the affected sinuses. In this case the rhinological examination was negative.

Onodi again calls attention to the variability of the relations between the sphenoidal and ethmoidal cells and the possibility of bilateral disease of the eyes, due to affections of the sinuses on one side alone.

Schleich emphasizes the connection of optic neuritis with diseases of the nasal accessory sinuses. Murray reports a case of optic neuritis, vision 20/100, peripheral contraction of field, with central scotoma, with chronic empyema of frontal and anterior ethmoidal sinuses. The symptoms disappeared and vision returned to normal within ten days after resection of the middle turbinate, and drainage of the cells.

Risley reports two cases of optic neuritis, with recovery after drainage of the frontal and other sinuses.

Fish cites 36 cases of optic neuritis, of which 26 were coincident with sinus disease. It should be noted that optic neuritis may not

only be caused by disease of the accessory sinuses, but may also be produced by intranasal operations, as when the optic nerve is injured.

Case of Fuchs'. Fuchs shows the importance of recognizing a relative scotoma in the early stages. This case is interesting because both nerves were affected and the ophthalmoscopic appearances were absolutely negative. It was that of a man forty years of age who had become blind in the right eye five years previously. At that time the diagnosis had been made of optic neuritis, which went on to atrophy. He came to Fuchs complaining of a slight blur over left eye, during the day time and slight pain in the depths of the orbit and attacks of supra-orbital neuralgia on the left side. The same symptoms had preceded the loss of vision in the right eye. Ophthalmoscopic examination negative, vision normal. By careful investigation with very small tests objects colored red and green, a small central scotoma was discovered. Diagnosis, retro-bulbar neuritis. By exclusion, there being no indications of toxic influences, syphilis or tuberculosis, Fuchs arrived at the diagnosis of chronic inflammation of the posterior ethmoidal and sphenoidal sinuses. These were evacuated by Hajeck and were found to contain polypoid degenerated mucous membrane. Result, complete cure; vision normal.

In this connection the report of a case coming under my care may not be uninteresting. On May 21st, 1909, Miss W., seventeen years old, was referred to me by Dr. John Chase, on account of a large tumor in the right nasal cavity. Nasal obstruction was complete, the right nasal cavity being occluded by the tumor while the left was closed by the crowding over of the septum. There was marked protrusion of the right eye, which was also turned outward at an angle of 33 degrees from the pressure of the tumor. Vision tested by Dr. Chase was 20x30 in right eye and 30x30 in left eye. No scotoma. A small hard tumor the size of a pea was to be seen just above the inner canthus of the right eye, which gave indistinct fluctuation. The first symptom noticed was obstruction to nasal respiration, which first appeared two years ago, and gradually increased until now it is complete. The next symptom appearing was the increased prominence of the right eye, first noticed about six months ago. This symptom gradually increased and the eyeball began to turn outward. The small tumor above the inner canthus was noticeable only a few weeks before consulting me, but was gradually increasing in size. There had been no pain at any time, and there was no fever. The growth completely filled the sinuses

of the right nasal cavity and the nose was becoming broad and flattened. There was no discharge from the nose.

The tumor was of bright red color, reminding one very forcibly of a fibrous growth, but somewhat soft and fluctuating to the touch of the probe. An aspirating needle was introduced and a quantity of muco-pus, at least a half ounce, withdrawn. The outlines of the tumor could now be somewhat more clearly made out. The attachment seemed to be in the region of the ethmoid cells and the outlet of the frontal sinus. Upon using the probe necrosed bone could be located in the region of the ethmoid cells. A cold wire snare was now introduced and the tumor, which was very large, removed in sections. One of the largest of these was sent to Dr. Ross C. Whitman of the State University for examination. In his report he says: "It is very edematous, and some fields show considerable hypertrophy of the endothelial cells lining the lymph vessels, while others contain very large, thin-walled blood vessels, so that it might be called either a lymphangioma cavernosum, or a hemangioma hypertrophicum, better a mixture of these. In any event it is not malignant."

Upon receiving this report, which seemed to agree with the previous diagnosis of degenerated mucocoele, a somewhat radical operation was decided upon, as considerable portions of the tumor still remained and muco-pus continued to flow from the ethmoid cells and frontal sinus. The eye-ball still turned outward and the small tumor still remained at the inner angle of the eye.

After giving five drops of volasem, a preparation consisting of equal parts of fluid extract of violet, strophanthus and calabar bean, and a most efficient antidote to cocaine poisoning, the nasal cavity was thoroughly anesthetized by the use of the pure cocaine. An applicator armed with cotton and powdered cocaine tamped upon every portion of the nasal cavity to be operated upon until it was insensitive. The nasal cavity was also sprayed thoroughly with a one to five thousand solution of adrenalin. The middle turbinated bone was now removed in its entirety as well as every particle of the tumor. A portion of the perpendicular plate of the ethmoid bone which was necrosed was also removed. The ethmoid cells, both anterior and posterior, were thoroughly curetted. A small curette was passed up into the frontal sinus and the infundibulum enlarged and curetted. The sphenoidal sinus was also opened up and its anterior wall broken down.

The patient stood the operation without complaint and stated that she suffered no pain. The nasal cavity was packed with iodiform

gauze for twenty-four hours and then removed. The small tumor at the inner angle of the eye at once disappeared and the eye-ball returned to its normal position. Some pus continued to discharge from the frontal sinus and ethmoid cells for a few weeks. These sinuses were irrigated daily for a time with antiseptic solutions and then less frequently. For a time polypoid growths continued to appear and were thoroughly removed. Finally on September 22 the patient was discharged with no pus present in the nasal cavity and no polypoid growths to be found.

As in this case necrosis of the bones was already taking place it is safe to assume that serious or fatal cerebral or optic complications would soon have occurred. In the curettement of the anterior and posterior ethmoidal cells and the sphenoid sinus one must use great caution on account of the close relation with the optic nerve, dura, and important vessels.

Gibson, after examination and measurement of many specimens points out the fact that the thin lamina of bone separating the sphenoidal sinus from the dura above, measures from 1-100 to 1-25 of an inch in thickness, and when this sinus contains pus, or polypoid growths, this thin plate of bone may disappear entirely. How necessary then to use as great care as is consistent with thoroughness in operating upon these cases.

In conclusion I would emphasize the fact that when the sinuses are the seat of disease the rhinological examination may be negative and the diagnosis must then be based upon the presence of central scotoma and other ocular symptoms.

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300 Jackson Bldg.

A CASE OF LARYNGEAL CARCINOMA UNDER OBSERVATION FOR THIRTEEN YEARS—ULTIMATE LARYNGECTOMY.*

BY HARMON SMITH, M. D., NEW YORK CITY.

A report of this case during its early observation was submitted to this body in 1896 by Dr. Gleitsmann under the title, "A Case of Unusual Laryngeal Growth." The patient disappeared and only came under observation again August 22, 1907, twelve years subsequent to the first examination.

Interest in this case is emphasized by the long period of comparative comfort experienced by the patient with a malignant growth in the larynx; by the low order of malignancy of the tumor which apparently existed in an unstable state of equilibrium with almost equal probability of becoming benign or malignant, and by the final determination of its pathological character after numerous pieces had been submitted for microscopical examination.

The prognosis given in Dr. Gleitsmann's paper—that the patient would ultimately succumb to the disease, as the indications pointed to malignancy, came true in part, and only surgical intervention prevented its being true in entirety; but the malignant character was of such low order that it took thirteen years for the tumor to become alarming in its subjective symptoms. To present the course of this case in its sequence it is necessary to draw largely from Dr. Gleitsmann's report of 1896.

The patient, J. S., a Russian Jew, thirty-three years of age, came under the observation of Dr. Gleitsmann in the winter of 1895, and was presented to the Section on Laryngology of the New York Academy of Medicine. No previous history of disease was obtainable. He complained of a hoarseness extending over one year. He had not lost flesh, had had no pain, no cough, no dyspnoea, and had been able to continue his vocation. His hoarseness remained unchanged during the period he remained under observation.

Externally the larynx and adjacent regions were normal. No glands could be detected. The examination of the larynx showed the epiglottis standing erect and uninvolved. A large, snow-white mass could easily be seen extending horizontally the entire diameter of the larynx from the anterior commissure to the arytenoid

*Read before the American Laryngological Association in Boston, Mass., June 1, 1909.

cartilage. It was confined to the right side, and appeared to be located between the false and the true cord, although nothing could now be seen of the true cord.

The whiteness of the growth was homogeneous in its entire length, its surface very little corrugated, and its free border slightly irregular. Movement of the involved side was apparently unimpaired, and adduction seemed perfect. The first piece removed for examination was not made sufficiently deep to show the real structure of the tumor, so a second piece was removed three weeks later.



Fig. 1. Appearance of Larynx as noted by Dr. Gleitsmann in 1896. Report in A. L. A. Transactions of that year, p. 145.

The microscopical report of Dr. Schwyzer, to whom the specimen was given, is as follows: "The tumor may be defined as a papilloma durum laryngis. It is composed of proliferated papillary mucosa, covered by a thickened epithelial layer. The surface layer of epithelial cells presents itself as a horny covering; the underlying epithelial cells show marked proliferation with a splitting up of the nuclei. The sub-mucosa shows a small-celled infiltration in consequence of connective tissue proliferation. The epithelial layer shows a tendency to invasion of the sub-epithelial tissues, as in carcinoma.

"The glands at the margin of the new growth appear very much changed. The individual tubules or ducts should appear distinct-

ly separate one from another, instead of which, and at certain points, the cylindrical epithelium appears to merge from one duct to another. This condition also gives rise to a strong suspicion of malignancy, and justifies the following diagnosis: *Papilloma durum*, probably *malignum*, and perhaps *carcinomatosum*."

Dr. Gleitsmann expressed the opinion that if either the whole tumor could have been removed or the excision made from a deeper layer, the malignant character of the tumor would have been more firmly established.



Fig. 2. Appearance of Larynx when first seen in clinic at Manhattan Eye, Ear and Throat Hospital, 1907.

The case then disappeared from observation until August, 1907, when he presented himself at my clinic at the Manhattan Eye, Ear and Throat Hospital. At the first examination I was inclined to believe the growth epitheliomatous or syphilitic, and placed him upon potassium iodide to eliminate syphilis from the diagnosis. The appearance had changed somewhat from the original picture and only certain areas of the white could be seen. The ventricular band was very much swollen, and parts of the cord on the opposite side were hidden by some swelling of the ventricular band of that side.

When I called Dr. Wright's attention to the case he recognized it as the one reported in 1896 by Dr. Gleitsmann. I removed a

piece of the growth and Dr. Wright reported is as probable Pachydermia laryngis. The patient had no pain, no enlarged glands, and had lost no suspicious amount of weight. Was hoarse, and complained of difficulty in breathing at times. A second piece was removed September, 1907, and Dr. Wright reported as follows: "There is considerable hyperplasia, with cornification of the surface layers, but the epithelium is dipping down into the stroma in atypical fashion. There is apparently not enough hyperplastic epithelial growth to account for the tumor. There is considerable nuclear fragmentation, which I suppose may be attributed to the previous endolaryngeal operation.

After each removal the patient felt very much relieved, and would willingly have had me remove a piece at each clinic attendance. There was scarcely any hemorrhage or any reaction after each operation.

There were several more examinations made of pieces removed, and at each time there were changes which led me more strongly to the belief that the tumor was not benign. The patient's condition began to get worse in January of 1908, and he gave evidence of general physical weakening. His hoarseness increased perceptibly and his breathing became more difficult, until he was anxious to have something done to relieve his dyspnoea. The examination of the last piece I removed at the clinic, April 8, 1908, was reported upon by Dr. Wright as follows: "I cannot but feel that this growth is now assuming a malignant histological appearance.

"1. The separation between the stroma and epithelium is becoming lost in many places.

"2. The epithelial cells are becoming in such cases more atypical.

"3. There is more penetration of the leucocytes whose nuclei are more fragmented.

"4. Cell inclusions, cancer cells, and 'whorls' are beginning to suggest themselves.

"5. The whole arrangement of stroma and glandular structure is more confused.

"6. The epithelial type varies more widely from typical columnar flat stickle cells, with many intervening atypical forms.

"7. There are several nuclei exhibiting markedly irregular karyokinesis. Altogether the evidence now points strongly to a malignant growth."

"It is evident that as the result of many examinations of tissue removed at different times, the changes here referred to must be

accepted as changes in my own opinion as to the nature of the growth rather than as changes in the structure of the growth itself. It was in reality the result of a more extended acquaintance with the topography and with the separate features of the tumor, and the cumulative evidence of the tumor furnished by successive pieces—and not a change in the biogenic forces.”*

The patient's general condition bore out the microscopical evidence of malignancy, though there had been no marked pain, except a sensation as of a foreign body on the right side of the



Fig. 3. Appearance of Larynx two weeks prior to operation. April, 1908.

larynx. There was a small gland sensible to palpation just below the larynx. The patient was suffering from marked dyspnoea, and was willing to have any operation performed to relieve his distress. Previous to this distress no amount of persuasion could induce him to have a laryngotomy performed, although Dr. Gleitsmann had a patient, upon whom he had performed a successful laryngotomy, exercise his powers of persuasion objectively as well as verbally, but to no purpose.

I turned the case over to Dr. George E. Brewer, at Roosevelt Hospital, for surgical consideration. A low tracheotomy was performed, and after an interval of ten days the larynx was removed. Before the patient left the table, a good-sized rubber tube was in-

*(Remark by Dr. Wright, after completing all the Sections).

serted into the stomach through the nose, and through this the patient was fed rather than per rectum. I believe this to be an advantage, as there was comparatively little depression following the operation, and the patient made a quick and uneventful recovery.

The entire larynx was given to Dr. Wright for further examination, whose report is as follows:

"The larynx of the patient operated upon by Dr. Brewer and submitted to me for examination, was completely filled with a sessile growth, plainly springing from nearly the whole of the in-



Fig. 4. Appearance of Larynx after removal opened anteriorly.

ternal structure of the right side, and apparently pretty well limited posteriorly and anteriorly by the middle line. It had a white papillary and irregular surface. Having been laid open by anterior incision through the cartilage, it was fixed in formalin and hardened 'en masse' in alcohol. The soft parts were then divided by vertical incision into five divisions; each of these was separated from the cartilage, embedded in celloidin, and mounted separately. A number of sections from each division were stained in eosin and hæmatoxylin, and examined with care.

"Since the vertical incisions passed through the aryteno-epiglottic folds above, and the extent of the mucous membrane below, involving tissue over 3 cm. long, and more than 5 mm. thick, the whole character of the growth could be appreciated, which was far from being the case in the small pieces removed from time to time endolaryngeally, and the causes of the embarrassment in the attempts at macroscopic diagnosis under these conditions was apparent.

"A glance through the sections of these divisions at once shows that the growth as a whole presents the characteristics of a flat-

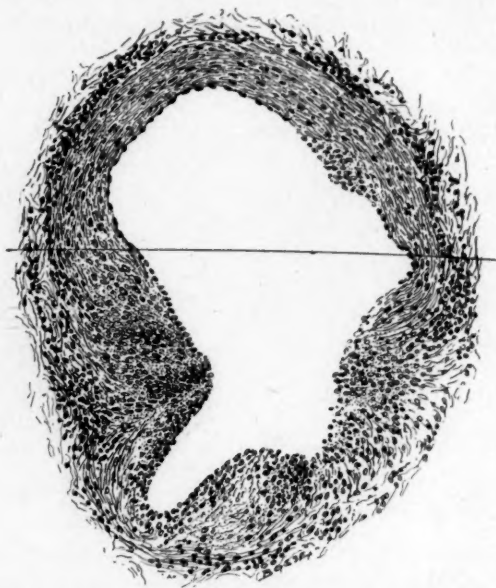


Fig. 5. Showing infiltration of blood vessel wall below the horizontal line.

celled epithelioma, while in portions of it this nature is far from apparent. In the great rarity of epithelial whorls so usually associated with this kind of epithelioma, in the rarity of marked irregularity in the karyokinesis, we note the absence of those special features in the diagnosis which often establishes it, even when the piece submitted is very small. The infiltration of the vessel walls with cancer cells, as shown in Figure 5, occurs chiefly in the deeper tissues of the growth, untouched by the endolaryngeal forceps. There are many

places where surface epithelium is so sharply differentiated from the stroma that a grasp of the forceps, including only this, would lead to the opinion that the growth might indeed be a pachydermia, which would be more in accord with the long duration of the clinical history. In other places, the stroma at the periphery of the growth occupied by a profuse proliferation of round cells with great fragmentation of the nuclei, thickened vessel walls, and structure sprung from the capillaries resembling giant cells, would warrant the suspicion that we had here to do with a syphilitic growth, if the forceps happened to excise that area, especially where the surface epithelium was not so thick. The cornification of the epithelium which gave it the pearly white appearance so prominent in the

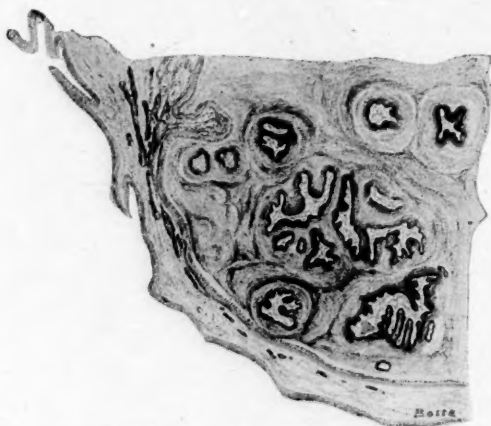


Fig. 6. Low power drawing of section from anterior part of larynx.

laryngoscope, and so elegantly shown in Dr. Gleitsmann's illustration, is not pathognomonic of malignant growth any more than of the pachydermia of the syphilitic patches, the smokers' plaques, and other benign epithelial hyperplasias.

"In the sections from the first or anterior division, one of which in a drawing from a low-power magnification is reproduced in figure 6, it is plainly to be seen that the heterogeneous cells at this point are under, but not connected with, the surface epithelium. Neither is the growth itself of such a nature as to suggest its origin from the columnar cells of the racemose glands, or from those of the laryngeal ventricles. By the contrast here presented, it is seen that the origin of the growth must have been else-

where, probably in that part of the larynx covered by squamous epithelium, that is, the vocal cords.

"But it is also evident that the surface epithelium here has taken on itself a process of proliferation whereby the surface has become papilliform, such as is seen in the papillary adenomata of the nose. As in the nose, so here it has arisen chiefly from an expansion of the ducts of the adjacent glands and a projection of the fundi of acini to the surface. The superficial glands have contributed to this process, but the deeper glands are not much involved. These sections have evidently fallen through the anterior portion of the fundus of the ventricle, the sub-mucous tissue of which has been invaded by the growth, while the surface tissue answering to the

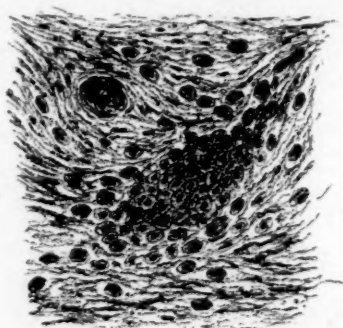


Fig. 7. Cancerous infiltration of the stroma, and an epithelial whorl.

irritative stimulus from below has been thrown into this pseudo-adenomatous condition.

"Elsewhere the tissue structure presents the general appearance to which I have referred. Leucocytes and their fragmented nuclei are abundant in the cancer cells, especially in those areas of vicious epithelium where, below, the definition between epithelium and stroma is lost.

"In division 2 and division 3 the sections show the surface epithelium is co-terminous with that of the growth, and here we get the convincing evidence of the infiltration of the arterial walls as shown in figure 5, and the cancer cells creeping along the lymph spaces, and the epithelial whorl, as shown in figure 7.

"Some of the subjacent stroma at a distance from the edge of the growth contains 'Mast-zellen' and fibrous tissue of a low grade, and eosinophilous cells. The left side of the larynx, while to the

naked eye presenting no appearance of disease, at least after the specimen had been hardened, showed on section that at the anterior portion in the region of the cords and above them, a little of the growth has fairly passed the middle line, but only by a few millimeters.

"There is nothing especially exceptional about the histology of this growth. We call it an epithelioma. There is something exceptional about the history. Recognized fourteen years ago by two microscopists as being of a malignant nature, it evidently has not changed its structure since. Beyond occluding the breathway, it has, as a matter of fact, run a comparatively benign course. No external gland involvement was found, in spite of the changes in the vessel walls I have indicated, and the future alone must declare if distant metastases have begun.

"Nothing could illustrate better than this case that *structure* is not always a satisfactory guide for prognosis. The remark may also be permitted that any operative procedure which eliminated this growth, or a portion of it, followed by twelve years of comparatively good health, would have been regarded as a triumph of surgical skill.

"I trust you will not find the few remarks I have to make on this case out of place. They are somewhat supplementary to the series of articles I have lately contributed to the *New York Medical Journal*, where I have referred to the declaration of Ehrlich and Apolant that 'the histological structure is the expression of clinical virulence.'

"This opinion of experimental observation of cancer is curiously contrasted with that of Lubarsch and Orth, and others who have had such large experience in the histological diagnosis of cancer in man. As I have insisted, I cannot subscribe to the views of Ehrlich and Apolant, if they are to be applied to cancer in man as it is seen in practice. I cannot too strongly urge the significance of this case in the consideration of the points involved. Recognized fourteen years ago by many clinicians and microscopists as a malignant epithelial growth, it has never been radically extirpated, but in spite of considerable endolaryngeal interference it has remained practically quiescent during that time. For most of that term it had passed from the observation of experienced laryngologists. The patient again presenting himself, his laryngeal growth changed somewhat in appearance, is again recognized by clinical observers as malignant.

"Many months elapsed before fragments removed for microscopic examination presented appearances confirmatory of the clinical diagnosis. A study of the series of sections from the whole growth as they exist in my slides, especially those from the middle of the larynx, cannot fail to reveal evidence of malignancy, as structure is usually interpreted, yet we see how comparatively benign has been the course of a growth in such a situation as the larynx, when in such a period of time it had not before reached dimensions and caused discomfort or suffering demanding its removal in a reluctant patient."

I last saw the patient in June, 1908, at which time he was in good health and could use his lips in speaking fairly well; but he seemed depressed mentally. I loaned him the amount of money he claimed was sufficient for his business purposes, and since that time the offer of a premium to the hospital orderly who could locate him has proved ineffective.

The three most important points in this case are:

1. The long-standing, slowly advancing malignancy of this tumor.
2. The almost positive belief in malignancy, and yet the presence of sufficient doubt to make one refrain from radical operative measures. I believe that in the early stages this tumor could have been removed by thyrotomy with a reasonable hope of non-recurrence.
3. The extremely small systemic manifestations for a malignant growth of such long standing.

44 West Forty-ninth street.

Further Report of a Case of Tracheal Scleroma. EMIL MAYER.
Amer. Jour. of the Med. Sci., February, 1909.

This case was first reported by Dr. Mayer in the *American Journal of the Medical Sciences*, CXXXIII, 751, 1907. Subsequent to the first report there was a recurrence of the growth, and Dr. Mayer relates in this communication the gratifying results achieved by treatment of the growth with the Röntgen rays. The treatment was conducted through an extensive tracheotomy wound. More than a year has elapsed since the operation and subsequent treatment, and the larynx and trachea are perfectly free from any scleromatous condition. The voice and respiration are entirely normal.

PACKARD.

BRONCHOSCOPIC AID IN THORACOTOMY.

BY OTTO C. GAUB, M. D., AND CHEVALIER JACKSON, M. D., PITTSBURG

At the meeting of the American Laryngological Association at Boston, May, 1909,* one of us mentioned the aid the bronchoscopist should render the surgeon in thoracotomy by passing oxygen down to the lungs. So many inquiries for details have been received that we herewith give the method.

The lung which ordinarily collapses when the pleural cavity is opened may be inflated with oxygen, deflated, held partially inflated, etc., at will by the bronchoscopist at the command of the surgeon. Oxygen can be admitted to the unoperated lung and a constant return flow maintained so that the vital pulmonary hemic changes go on normally and pleural shock is also lessened. Furthermore, the lung on the operated side can be allowed to collapse without danger to the patient, thus allowing the surgeon ample room for work with the hands and instruments within the thorax. Again, independent of inflation and deflation a constant supply of oxygen is kept streaming through the lungs supplying every need, as shown by the pink color of the blood.

Thoracotomy is not within the province of one of the writers, and the experimentation was undertaken at the suggestion and with the guidance and wise council of Dr. Otto C. Gaub, who did the thoracotomy and who will give the methods and results in full when the full series of experiments shall have been completed.

The apparatus is simple and readily understood. As with anesthesia, the simpler the better; the main reliance for safety being upon the personal skill of the administrator, who is closely in sympathy with his patient's condition, pulse, respiration, and, above all, color. This matter of color is the safest and chief index of the perfection of the hemic pulmonary processes of oxygenation and excretion. Pressure gauges are easily attached but are dangerous and misleading for this work in practice, as they lessen the administrator's watch upon the just mentioned indices of the vital processes. The fundamental law which must be constantly before the mind is that of Crile. In brief, the intrapulmonary pressure must not exceed the capillary blood pressure or the compression of the capillaries and consequent ischemia will prove fatal. We at first

*The Laryngoscope, 1909.

thought of surrounding the bronchoscope with an inflatable rubber dam to make a pressure-tight fit around the bronchoscope, but upon talking over the subject with Dr. George W. Crile, he warned us of the danger of excessive pressure. It was then found upon experimentation that the aspirating bronchoscope (Fig. 1), would serve the purpose in the simplest and safest manner. This instrument lighted by a lamp at the distal extremity, was devised by one of us a number of years ago for the general purposes of bronchoscopy in cases where excessive secretion obscured the view. The auxilliary drainage canal in the wall of the tube was, for that purpose, connected with an aspirator. For the purposes now under consideration, however, this canal is used to convey oxygen to the distal extremity of the tube, this extremity being inserted into the main bronchus of the operated side to the point where the upper lobe bronchus is given off. This position is found instantly by sight, the bronchoscope being passed in through the mouth in a few

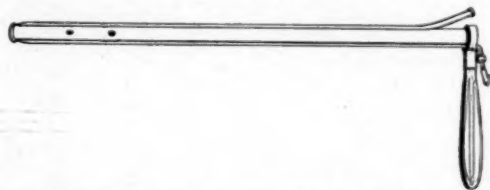


Fig. 1. Aspirating bronchoscope used to control pneumothorax in thoracotomy. The auxilliary canal in the wall of the tube ends in the lumen of the tube at the distal end.

seconds, and without the slightest difficulty. (At times it may be necessary to insert it in one of the branch bronchi, or to withdraw it to the tracheal bifurcation and insert it in the unoperated side. All of these manipulations can be performed promptly and with precision as the interior of the bronchi is at all times visible through the tube). The oxygen being turned on at the valve (V, Fig. 2), the oxygen rushes into the bronchi, and, the escape being free, the pressure is more or less under control of the valve V. Of course, if it were admitted to a closed cavity the pressure would soon equal that of the tank. The return flow of oxygen and other gases is chiefly through the main lumen of the bronchoscope. The careful and skillful regulation of the escape of gases by the thumb (T), of the administrator is a simple and perfect control for the inflation and deflation of the lung on the operated side. The lung on the unopened side of the thorax participates in the rise and fall of endo-pulmonary pressure by means of the lateral openings in the

main lumen of the bronchoscope and also by means of the accessory return flow of gases around the outside of the bronchoscope, being more or less, according to closeness of fit of the bronchoscope in the bronchus. This accessory return flow is hindered by the glottis, to a greater or less extent, according to the closeness of fit of the bronchoscope in the glottis. If thought desirable, this could be closed off by an inflating collar like a Trendelenberg tracheal cannula, but in our opinion this escape is a necessary safeguard to avoid the danger of over-pressure as warned against by Dr. Crile. The lung on the operated side is watched through the wound by the bronchoscopist, so that the lung may be held exactly where the

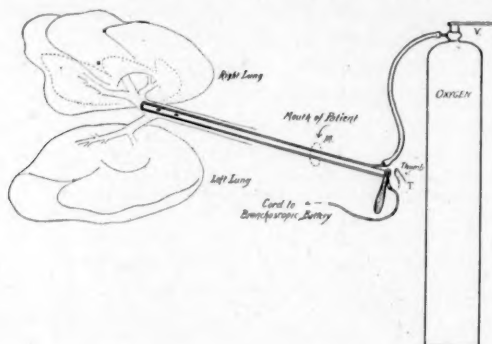


Fig. 2. Schema of bronchoscopic aid in thoracotomy. The right lung is the operated side, and the dotted line represents schematically the collapse of the lung; this deflation is absolutely under the control of the bronchoscopist who at the command of the surgeon can inflate, deflate, or maintain at any stage of partial inflation, by the admission of oxygen by valve V and the control of the escape at the proximal end by more or less complete closure with the thumb. A wash bottle for the moistening the gas is omitted for clearness.

surgeon wishes. The bronchoscopist, however, is entirely out of the surgeon's sterile field and has a separate sterile organization of his own.

So far all the work has been done upon the dog, but our results have been such that we feel certain that much of the respiratory and circulatory disturbances incidental to large pleural openings can be prevented or controlled and that with further development the thorax may be opened with only very slightly higher mortality than the abdomen, and that such mortality as does occur will not be due to pneumo-thorax or its sequelae, but to pleural shock and other causes with which the surgeon is familiar.

Westinghouse Building.

AN ANESTHETIC ATTACHMENT FOR THE BRONCHOSCOPE.

BY CHEVALIER JACKSON, M. D., PITTSBURG, PA.

When the bronchoscope is in position all the inspired air passes through the tube, none through mouth or nose; hence the maintenance of the anesthesia interrupts the work. To obviate this, Dr. T. Drysdale Buchanan, of New York City, suggested to me a new method of administration.

The patient is anesthetized in the ordinary way, then the bronchoscope, Fig. 1, is inserted, the rubber tubing is attached and the

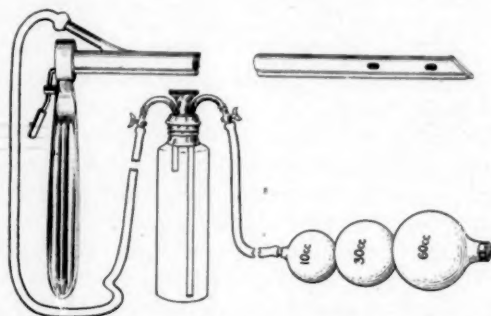


Fig. 1. Bronchoscope with dosimetric chloroform apparatus as suggested by Dr. T. Drysdale Buchanan. The metal tube on the bronchoscope ends in the interior of the bronchoscope, not in a canal in the wall of the tube. The bottle contains the chloroform; the bulbs are used to drive air through the chloroform. The dosage depends upon the size of the bulb pressed.

subsequent administration of chloroform is by pressure upon one of the bulbs during inspiration only, the dosage depending upon the size of the bulb, a given amount of air taking up approximately a definite amount of chloroform. I have stated above that the anesthesia is started in the ordinary way. It, however, is Dr. Buchanan's usual custom to give chloroform anesthesia for general surgical cases with the same apparatus, a mask being attached instead of the bronchoscope as shown in the cut.

Westinghouse Building.

REPORT OF TWO UNUSUAL AND INTERESTING CASES OF ACUTE EDEMA OF THE LARYNX.

BY HAL FOSTER, M. D., KANSAS CITY.

The laryngologist meets with many cases of laryngeal edema, all of which are interesting and instructive. Many of these cases tax the skill of the physician, and in order to save the life of the patient he has to act quickly. The causes are too well known for me to attempt to name them here. The two following cases are unusual and for that reason worthy of reporting.

Case 1—Several years ago my friend, Dr. J. P. Knoche, called me early in the morning by telephone. The doctor stated that he had sent one of his farm-hands to my office, and requested me to attend to the man at once, as he was scarcely able to breathe. History: The patient, a German, aged twenty-three, was strong and had never been sick. Had been only a short time in this country. He was working as a farm-hand in Dr. Knoche's vineyard. It was about the last week in September. The hands had been gathering grapes and making wine. It was late in the afternoon; the men had about finished the day's work. This young man decided to take a drink of wine from a barrel, from which all the wine had been removed except a little at the bottom. This barrel stood on a stand about two feet above the ground, and he could very easily tilt it forward, as it was open, and drink direct from it. He took a sip or two, after which he screamed with severe pain in the region of the larynx. He had a severe attack of coughing and finally spat up a live Yellow Jacket. The Yellow Jacket was in the wine when the man drank it. Dr. Knoche administered a sedative and cold external applications and put the man to bed. Next morning at 8:30 he was brought to my office by two strong German boys in a buggy. He complained of nausea, was very weak, scarcely able to stand, spoke in a whisper, and was breathing with great difficulty.

I saw at a glance that I must do something to give him air, or he would suffocate and die in my office. The others boys had told me his difficult breathing was all caused by the sting of a Yellow Jacket. I placed him in my chair and drew his tongue slowly forward; this gave him more air, and would relieve him momentarily. I then made a laryngeal examination and saw distinctly that his

larynx was almost entirely blocked by a large bleb. This bleb was filled with serum and had been caused by the sting of the Yellow Jacket. I made a hasty laryngeal application of cocaine and adrenalin chloride. This gave him relief also. I then took a long laryngeal knife, under the guidance of the laryngoscope, made a free incision into the bleb. A serum-like fluid ran out quite freely, which gave the patient immediate and permanent relief, as he could now breathe in the normal way. His throat was sore; I applied menthol solutions in oils, which were very soothing. He was directed to use a small hand nebulizer of this solution every hour. The cold external applications were continued all that day. Hot sterile salt solutions were used as a gargle to keep the pharynx clean. When he returned to see me the next day he was as happy as any boy I ever saw, and not much worse for the Yellow Jacket sting. The larynx was still red, but under the treatment the inflammation almost entirely disappeared by the fourth day.

The sting of a Yellow Jacket is very painful. The writer had one to sting him on the foot once and writes from experience.

Case 2—January, 1902.—My friend, the late Dr. Spaulding, came to my office about 8:30 a. m. It was a very bitter-cold day and had been cold for several days; the thermometer registering below zero. The doctor said that he had a girl patient in a dying condition in a carriage at the door. He said he thought she would suffocate, and asked if he could bring her in. While Dr. Spaulding and the matron of Taylor's Dry Goods Company were returning with the girl, I hastily got things ready to open trachea or do intubation. The doctor returned in a few minutes, as he was a physical giant carrying this girl of eighteen in his arms as easily as he would a baby. The girl was scarcely breathing and seemed to be nearly dead. The doctor placed her in the upright position. I inserted a small mouth-gag and drew her tongue out; this gave her a little air; all this time she was making great efforts to breathe. Assisted by the matron of the dry goods store and my assistant, Miss Anderson and the late Dr. Spaulding, I was in a moment enabled to get a view of her larynx. Under the guidance of the laryngoscope, I applied adrenalin chloride and cocaine solution, after which I could see a very large sub-glottic swelling. A long laryngeal knife was used and I hurriedly incised this bleb. The patient's head was now inclined and the bleb emptied its contents of serum, and immediately the girl began to breathe freely, much to our delight. The fluid was serum and not pus. She was allowed to rest ten or fifteen

minutes, after which time I made laryngeal applications of adrenalin and menthol solutions. A mild solution of argyrol was applied. She was given hot solutions to be used in a hand nebulizer every hour. This treatment relieved her permanently and rapidly. She was entirely well in a week and returned to clerk at the dry goods store of John Taylor.

History in brief: She had had a cold for several days and was very hoarse. The weather was below zero. She walked to the store about fifteen blocks the day of her severe illness. The late Dr. Spaulding was called to the store and found the girl in a semi-conscious condition, and immediately brought her to my office. The severe cold weather no doubt had brought on the attack.

Dr. Spaulding was killed accidentally by falling from an elevator and this patient shed some tears—with myself—at his funeral, a few months later.

Drs. Porter and E. E. Robinson are familiar with the history of this case. The edema in both cases was sub-glottic and came near blocking the larynx. The blebs were large. One might ask why the sack did not rupture, and evacuate its contents, where so very much coughing occurred. There was no pus in either case, but much serum. I have relieved edema many times in children by intubation tubes. These are the only two cases in adults which have ever come under my observation, where the symptoms were so urgent and would soon have resulted in death, had not treatment been resorted to immediately. I find it a good practice to make laryngeal examinations either direct or by the indirect method, whenever patients are taken suddenly with laryngeal edema. The physician can see what the trouble is and apply the proper and successful treatment.

There was no constitutional cause for the edema in either case. Neither patient had diabetes, Bright's disease, or any cardiac lesion. They were not taking iodide or any other drugs, and were enjoying the very best of health when the edema was ushered suddenly in, one by the sting of a Yellow Jacket, the other by severely cold weather.

Altman Building.

CHLORETONE AS A LOCAL SEDATIVE TO THE RESPIRATORY TRACT.

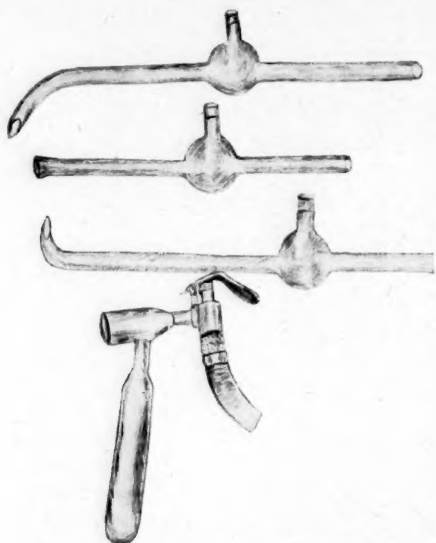
BY WILLIS S. ANDERSON, M. D., DETROIT, MICH.

Chloretone is chemically a Tri-chlor-tertiary-butyl alcohol, and is recommended as a hypnotic, sedative and anesthetic. It occurs as small, white crystals, with a faint camphor-like odor. It is sparingly soluble in water, more so in olive oil, and freely in alcohol. It readily volatilizes by heat.

Besides its well-known action as a hypnotic and sedative when taken internally, it has a value as a local application to the mucous membrane of the respiratory tract. It is to this later use in the field of laryngology that I wish to call attention. I have used for a number of years as an intratracheal injection, to relieve irritation in the larynx, trachea and bronchi, the following solution: Oil of eucalyptus, five per cent, and chloretone, three to five per cent, in sterilized olive oil. One-half to one-and-a-half drams of the warmed solution is used for each injection. In tubercular laryngitis stronger solutions of chloretone are beneficial as a spray, application or as an injection. In all cases its sedative effect is marked and more lasting than other anesthetics with which I am familiar.

Over a year ago my attention was called to an unique method of applying chloretone to the mucous membrane of the throat. In *La Presse Medicale*, July 20, 1907, Fiocre describes a new method of application. He takes advantage of the volatile property of chloretone. By the application of heat the crystals become readily liquified, and the vapor can be deposited upon a surface by a current of air. He suggests a simple apparatus for its use in this way. All that is necessary is a glass tube, suitably curved, with a spherical bulb at about the center of the tube. About ten grains of chloretone are placed in the bulb, the opening in the top closed by a cork, and heat applied until the crystals melt. An alcohol lamp, an ordinary gas flame, or even a lighted match will supply the necessary heat. While the crystals are in the liquid state a current of air is blown through the glass tube, and a white vapor of pure chloretone can be deposited upon a surface. Taking my hint from the illustrations in the article referred to, I had made in the glass department of Parke, Davis & Company, through the courtesy

of the company, a number of suitably curved tubes. Later, a handle was made so that the tubes could be more easily held. Air from a compressed air apparatus, or from an ordinary atomizer bulb, furnishes the current necessary. The accompanying figure shows the different shaped tubes and the handle. As the tube cools the chloretone will be deposited on the inner surface of the glass. By heating the tube the deposit can be melted and run back into the bulb, and used again. A vapor of chloretone deposited upon a surface of mucous membrane forms a white film. Gradually it becomes dissolved by the moisture on the surface of the membrane.



At first there is a slight tingling, and a suggestion of the taste of camphor, which is soon followed by its anesthetic action.

Chloretone applied in this way to a tubercular larynx will produce in a few minutes an anesthetic effect sufficient to enable a patient to swallow soft food without discomfort. This effect often lasts for hours, and can be repeated several times a day as necessary. In a similar manner the writer has used chloretone to relieve the pain following operations upon the throat, and in malignant diseases. Like all similar drugs its effects will wear out in time, but it can be used in increasing frequency without danger of establishing a drug habit or fear of poisonous effects. Its marked germicidal action adds to its value when used locally.

Hyperesthesia and paresthesia of the throat are conditions troublesome to relieve, in many instances. We know that many of the symptoms commonly included under these terms are due to definite lesions, which, if removed, will cure the patient, but there are other instances where careful search fail to reveal any objective cause for the peculiar train of symptoms. The chloretone vapor in a number of these cases has given relief, and in a few instances the cure was permanent.

An occasional disagreeable effect from the vapor has been noted when too much has been used in the nose or nasopharynx. The patients complain of a sudden fullness in the head, sometimes amounting to dizziness. This usually passes off in a few minutes, but a patient under the care of a colleague, noticed disagreeable sensations for over twenty-four hours following the use of the vapor in the nose. I presume some of the vapor entered one or more of the sinuses and by its expansion caused the symptoms.

606 Washington Arcade.

Streptococcic Throat. R. MCKINNEY. *Jour. A. M. A.*, May 29.

Dr. McKinney refers to the communications of Alice G. Bryant in *The Journal*, June 13, 1908, and of J. O. Hollick in the *London Lancet*, December 19, 1908, which last one he quotes largely, as of special interest in reference to streptococcic infection of the throat. A condition has prevailed during the past winter in Memphis and the surrounding country similar to or identical with that described by Hollick of streptococcus disease, either alone or with diphtheritic infection in addition. In these mixed cases the antitoxin does not seem to have the same good effect, and when virulent the disease is likely to be fatal. While ordinarily we do not expect a streptococcus infection to be fatal, we are not justified in giving an unqualifiedly favorable prognosis in any of these cases, since we cannot determine whether it may not take on a malignant form at any time. Seven cases in all are reported by him, one of them being fatal. The other patients recovered, usually in a short time, but in one case in an adult, though there was no diphtheritic infection reported, there was great prostration and a slow recovery.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Fifteenth Annual Meeting, Atlantic City, June 3 to 5.

CHRISTIAN R. HOLMES, President.

The Present Status of the Tonsil Operation, Its Indications, and the Various Methods in Use. By G. L. RICHARDS, M. D., Fall River, Mass.

The author presented the results of a collective investigation, based upon replies to a series of questions addressed to prominent laryngologists in Europe and America, and upon the literature covering the subject. The questions considered the following points: (1) The physiological function of the tonsil; (2) the use of chemical caustics in its treatment; (3) its relation to tuberculosis and the cervical glands; (4) its relation to rheumatism; (5) indications for its removal; (6) the choice of operation; (7) the necessity for re-operation; (8) present technic; (9) the question of hemorrhage connected with the operation; (10) the result as to the voice. The various answers were analyzed more or less in detail.

The general tenor of the seventy-seven answers to the first question showed that laryngologists have not concerned themselves very extensively with the physiology of the tonsil, or as to its value as an organ in the throat. Thirty-four considered the tonsil of value when normal as an arrestor of the entrance of pathogenic organisms, and that in early life it assists leucocytosis and gives off phagocytes, losing these functions when diseased. Seven considered it a lymphatic gland of no special function, and nine as a producer of white cells when in a state of health. Ten considered that it has no function and no physiological value; four that it secretes an antitoxin and furnishes moisture to assist in deglutition, and five considered its function unknown.

The majority were of the opinion that there is a direct relationship between enlarged cervical glands and the tonsil, the tonsil being apparently the gland through which the infecting agent comes, as evidenced by the cessation of adenitis after removal of the tonsils. Only thirty-nine out of the one hundred and thirty who replied to the

third question had knowledge of any connection between the tonsil and tuberculosis. From the conflicting testimony on this subject it would seem that the question of the entrance of tubercle bacilli through the tonsil has been definitely determined by a sufficient number of careful observations to render the fact an undisputed one. The relation of the tonsil to rheumatism presented an interesting field, complicated by the doubt as to the etiology of the disease. The investigations of the various authors show the possibility and probability of the tonsil as a portion of infection, and prove that whatever of protective value to the organism the tonsil may theoretically have, it is practically of little value; on the contrary, it is not infrequently a decided menace.

The weight of evidence was against the use of chemical caustics, yet the opinion of Freer, who regards chemical caustics as the resort of the timid manipulator who shuns surgery because he is afraid to do it, is not substantiated in fact, since some of the most competent laryngologists employ these measures whenever occasion demands.

The indications for the removal of the tonsil were given as follows: Recurrent tonsillar abscess or quinsy; recurrent simple tonsillitis; diseased crypts, with or without hypertrophy; the co-existence of rheumatism and tonsillitis; mouth-breathing, accompanied by hypertrophied tonsils; general toxemia of tonsillar origin; impaired nutrition, and systemic dyspnea. Opinions differed concerning the removal of the tonsil in the presence of tuberculosis, some holding that it is not only of no advantage to do so, but that it is a serious disadvantage, in some instances hastening the tuberculous process. The custom of some operators to remove the tonsils when removing adenoids was approved by some and condemned by others. The author thought, since no one apparently misses the glands when they are out, it is better to give the child the benefit of the doubt and remove them when the adenoid operation is performed. In general it might be stated that tonsillar tissue should be removed when its pathological condition cannot be cured in any other way.

The opinions given in answer to the question as to the preference for tonsillotomy or tonsillectomy showed a gradual perceptible change toward the more thorough operation of tonsillectomy. The necessity for re-operation, after ones self or others, was not noted when tonsillectomy had been performed, the opinion being held that the remnant of tonsillar tissue left after tonsillotomy is susceptible of becoming hypertrophied.

With reference to the question of anesthesia there was a decided difference of opinion. Sixty-three use ether as an anesthetic for children; ten, gas and ether; ten, chloroform; one, chloroform up to twelve years of age, ether after this age; seven, ethyl chlorid; five, somnoform; two, nitrous oxid; three, ethyl bromid; two, ethyl chlorid and chloroform.

The preference as to the position of the patient for operation was given by twenty-five to the dorsal for children under general anesthesia; the prone position, one side or the other, was favored by forty; the semi-recumbent by two; the Rose and Trendelenberg by seven, and the upright by twenty-seven. It was noted that the upright position is used almost exclusively by operators in the New England States, and by former house pupils in Boston hospitals who are now scattered over the South and West. The author, comparing reports of accidents, hemorrhage and the like, did not find them more common when the upright position was employed than when the patient was put in the dorsal or recumbent position. He advocated the upright position unless there were manifest reasons in favor of the greater safety of one of the other positions.

The trend of the reports given showed a leaning toward the complete enucleation of the tonsil, with the capsule, the technic varying with the individual operator. The author advocated finger enucleation, holding that the separation of the capsule from the muscle can be made very readily and thoroughly with the finger. One advantage of the finger nail for this purpose is that in buried tonsils where it is sometimes hard to get good traction with the forceps without tearing, and where there may be danger of cutting the pillar with sharp instruments, it is possible by the sense of touch alone to do nearly the entire dissection.

A great variety of experience was shown with reference to the question of hemorrhage, the reports varying from no hemorrhage at all to ten per cent of bleeding sharply at the time of operation, while secondary hemorrhage occurred all the way from one to seven days after operation. From the reported cases there is no particular proof that dangerous bleeding occurs more often in adults than in children. In addition to hemorrhage, injury to the uvula, pillars or palate, quinsy from incomplete operation, and as a result of injury with snare, double otitis media with double mastoiditis, and acute otitis media, were some of the accidents reported.

The question of injury to the voice following the removal of the tonsils was answered guardedly by those who have had most ex-

perience with professional singers, admitting that for the time at least there is an alteration in the voice, followed later, as a rule, by improvement, most of them having found that higher tones were obtainable than before. The author believed the range and power of the voice should be increased, provided the pillars are uninjured, after complete tonsillectomy, as in many cases the tonsil, by its firm attachment to the pillars, especially if it is enlarged, hinders the mobility of the muscles. He had always believed that the reported cases of injury to the voice were due to the fact that the tonsil stumps were still present, hindering the mobility of the muscular action, or else that the pillars themselves were injured by the operation.

DISCUSSION.

DR. AMOS R. SOLENBERGER, of Colorado Springs, Colo., said the knowledge of the function of the tonsil in the economy has thus far been for the most part indirect. Tonsils had not been studied during the period of their evolution. The practice, therefore, both as to prevention of their disease and treatment had been a kind of negative empiricism, based on the supposition that, unlike that of the thyroid gland, there results no harm to the economy by their sacrifice. Until more exact knowledge of the function of the tonsil was obtained he thought it best to make every reasonable effort to maintain and restore its health. He considered the salvation of the tonsil in childhood most important. Next in importance was the causal relation between certain systemic diseases and diseased tonsils. How had the whole vicious circle come to be? It was evident that knowledge, not only to insure the best results in the application of remedial procedures, but to make prophylaxis most effective, should be more exact. Here, too, with all the noteworthy research, practice still proceeded on what was known of the principles and laws of general pathology. For effective prophylaxis a more exact pathology was needed, a pathology which would discover the disease force between the open door and the remote parts of the system, in all the channels whose fluids are now only suspected of being carriers. Only such exact knowledge could tell when conservative prophylaxis should end and operative prophylaxis begin. Cases requiring operation should be selected with greater discrimination. Much of this operative work was still done superficially, not always because the indications were not clear, but because it was still regarded as a minor operation; furthermore, neither the physician nor the patient yet comprehended its far-reaching import. This

condition of affairs would be overcome by more comprehensive knowledge of the subject, by insistence, in the face of clear indications, upon more radical work, by respecting its dignity as a major operation, and by observing the precautions which apply to major surgery. The patient should be told that the operation is not only not a menace to life, but is a life-saving procedure, and that the danger to life is practically *nil* if he will submit to radical work in a hospital.

DR. G. HUDSON MAKUEN, of Philadelphia, believed there exists a very decided relation between diseased faucial tonsils and cervical adenitis. A probe could be passed from a diseased cervical gland into the tonsil. He cited the cases of two children referred to him, both having enlarged cervical glands. In one the gland was as large as a small tumbler, and in the other it was much smaller. The tonsils were removed in each case, and strange to say, the child with the very large gland was nearly well within a week, whereas the child with the small gland had a marked increase in the swelling in the neck, with decided tenderness to touch. In other words, one child was practically cured and the other was made a great deal worse by the operation. These cases were mentioned merely to show the relation which exists between tonsils and the cervical glands. A normal tonsil was scarcely demonstrable without pulling the pillar forward and outward, and of course it should not be removed. He was fully aware that an hypertrophied tonsil is not necessarily diseased, although the majority of them are. When a tonsil is diseased it is diseased not in part, but in its entirety, and therefore it should be removed in its entirety. He would as soon think of leaving the diseased root of a diseased tooth in the alveolar process as of leaving a portion of a diseased gland in the fauces. Referring to the subject of "adhesions," he thought the speakers should make a distinction between normal and pathological adhesions. That pathological adhesions are found no one would deny, and that the tonsils are normally adherent, or attached, to the pillars was equally apparent. The question of injury to the voice supposedly resulting from the removal of the tonsils usually emanated from teachers who are opposed to surgery. It was absurd to think of tonsillectomy, in suitable cases and properly performed, as doing injury to the voice.

DR. CHARLES W. RICHARDSON, of Washington, D. C., said that the influence of tonsillar inflammation upon the other organs and upon the adjacent glands was undoubtedly very pronounced. Inflammation in the deep cervical glands following tonsil operations was not infrequent. On the other hand, he had seen glandular

hypertrophy of a chronic character disappear after removal of the tonsils. Rheumatic affections of various types were often of tonsillar origin. He cited two cases with which he had been very closely associated, both previous to and following the extirpation of the tonsils, in which there had been rheumatic manifestations. In one case the tonsils were removed five years ago and in the other four, and in neither had there been any signs of rheumatism since a month after extirpation of the glands. He had seen marked tuberculosis infection of the tonsil where all efforts to find evidence of pulmonary invasion failed, both by physical signs and sputum examinations. After the ulcer in the tonsil healed he almost doubted its tuberculous nature. About six months after the ulcer healed the patient returned, with no pain whatever in the larynx, yet with the upper half of the epiglottis gone. He subsequently died of pulmonary tuberculosis. With reference to radical tonsil operations, he considered that diseased tonsils—which included hypertrophied tonsils—should be extirpated, but he denied the necessity for the removal of tonsils, which were not enlarged, and that had never given rise to any disturbance within its own borders or elsewhere. The latter class of tonsils were being removed too often. As to the method of enucleation, it should be thorough, by whatever method one chose to employ. Since coming under the influence of Dr. Richards he had been convinced that the finger dissection was the proper method when it was desired to remove the tonsil with its capsule.

DR. GEORGE F. KEIPER, of Lafayette, Ind., said it was interesting to note that there was a return to the methods of 1846 and before. Those who had read the first work on laryngology published in this country, Dr. Horace Green's, which he called *Bronchitis*, are aware of the fact that the operation for total removal of the tonsil was described and insisted on by Dr. Green. Various methods of and instruments for operation have been devised which have not proven satisfactory in all respects. In the old work referred to, Dr. Green presented a pair of forceps for pulling the tonsil out, also a bistoury, which would be useful at the present time. In the surgery of the tonsil laryngologists had wandered far afield, and it was gratifying to note that there was a return to the methods in vogue in the days of our fathers, when they, too, recognized the value of total extirpation of the tonsil. In Dr. Green's work mention is made of the existence of the tonsillotome even at that early day.

DR. WILLIAM L. BALLENGER, of Chicago, had never known before than the finger dissection, which was a very old method, was of

such universal application. For nine years he had been publicly proclaiming that the tonsil should be removed intact. He recognized the fact that if all the tissue except the capsule is removed it is a good operation, but he would be inclined to mistrust the statement that the entire tonsil is removed unless its capsule is shown with it. That was why he had insisted upon the removal of the tonsil with its capsule intact—not upon any particular method of removal. He agreed with Dr. Myles with reference to adhesions of the tonsil to the pillars. He had removed thousands of tonsils, and in his experience it was very rarely that pathological adhesions were found. There were many things which might deceive one in this regard. Many operators think they have encountered adhesions, when, after cutting through mucous membrane and loose areolar tissue, they do not at once go behind the capsule. When they go into the capsule and meet this resistance in trying to get out again, they think they have encountered adhesions. One writer had for years referred to the *piica tonsillaris* as an adhesion, when it was nothing of the sort. As a matter of fact, pathological adhesions were very rare.

DR. E. R. SHURLY, of Detroit, Mich., held that in cases of rheumatic or septic invasions of tonsillar origin, in quinsy, and where there are pockets found in the tonsil, complete tonsillectomy is the procedure to be followed. With tonsillectomy two-thirds of the tonsil might be removed and it was a serious question as to how much damage the stump was capable of doing. Not all cases of rheumatism were of tonsillar etiology.

DR. LEE M. HURD, of New York City, said a large discrete tonsil would do little harm, causing no enlargement of the glands of the neck or other trouble. He judged a tonsil more, with reference to the operative procedure, by the condition of the deep chain of cervical glands than upon any other condition, advocating tonsillectomy in the event of their enlargement. He had had less hemorrhage from tonsillectomy than from tonsillotomy.

The soreness of the throat depended upon how much the tissues were injured. He had studied a series of twelve cases with Dr. Wright, in all of which the glands were enlarged, in most of which were stumps left after tonsillotomy, and in which there was tuberculosis of the tonsil, demonstrated by the microscope in nine cases. Tubercular granulum, giant cells, and other pathological structures were found, suggestive of tubercle. Tubercle bacilli were found in two cases. One patient with tuberculosis had been operated upon

eleven times for tuberculosis of the glands of the neck. He did not believe the voice is affected by tonsillectomy unless there is injury to the pillars. He had removed the tonsils from a baritone singer who sang in opera two weeks after the operation, with no change in his voice, and with no subsequent trouble.

DR. RICHARDS, in closing the discussion, called attention to some drawings illustrative of the so-called "submerged" tonsil and other varieties.

Nasal Obstruction: Experimental Study of Its Effect Upon the Respiratory Organs and the General System. Illustrated by Slides for the Lantern and Projection Microscope. By W. S. ANDERSON, M. D., Detroit.

The paper dealt with the following subjects: (1) Anatomical differences between the throats of animals and man. (2) The effect upon the lungs, heart and general nutrition following the obstruction of one or both nostrils of guinea-pigs and rabbits. (3) The production of asthma and emphysema in animals by obstructing the nose. (4) The effect upon the progeny, when one or both parents have nasal obstruction. (5) The effect upon the hair, skin, and general nutrition of dogs. (6) Increased susceptibility to infections, and variation in susceptibility according to the age of the animal. (7) Histological changes in the lungs and other organs. (8) Practical deductions to be drawn from the experimental work.

The following conclusions were suggested by the experiments: (1) That nasal obstruction leads to death, or to serious impairment of vitality. (2) That the lowered resistance predisposes to infections. (3) That local disease of the respiratory tract is induced. (4) That obstruction of the nostrils leads to dilatation of the heart. (5) That changes in the skin and the blood of dogs occur. (6) That symptoms resembling asthma and emphysema may be induced in the lower animals. (7) That re-opening the occluded nostrils is followed by prompt disappearance of the symptoms.

Infections and Inflammatory Complications and Sequelæ Following Intranasal and Epipharyngeal Operations, and How to Prevent Them. By W. L. BALLENGER, M. D., Chicago.

According to the author's observations nearly all the inflammatory complications and sequelæ following intranasal and epipharyngeal operations have been due to one or more of three conditions, namely,

(1) failure to prepare the field of operation; (2) the use of intranasal tampons and dressings after operations, and (3) incomplete or ragged surgical technic. It follows as a natural deduction that in order to prevent such complications and sequelae the field of operation should be properly prepared; in other words, in accordance with the surgical principles which apply in other regions; that intranasal tampons should not be used except in extreme necessity; and that all intranasal surgery, especially of the ethmoid sinuses, should be thoroughly performed in a neat and surgeon-like manner. The complications and sequelae of intranasal and epipharyngeal operations, which are usually infections and inflammations, may be limited to the nasal chambers, or they may extend to the pharynx, larynx, tonsils, middle ear, and mastoid cells. A frequent source of infection and inflammation following these operations is the failure to properly sterilize the nasal and pharyngeal spaces before performing the operation. Another frequent cause is the injudicious use of intranasal tampons and dressings. A tampon, in the author's opinion, should be used solely for the purpose of controlling severe hemorrhage, and even then the gauze should be impregnated with powdered subnitrate of bismuth or the compound tincture of benzoin, or some other chemical of equal value. A further frequent cause of infection is poor surgical technic in which the tissues are contused, torn and ragged, and in which the cells and middle turbinated body are but partially removed.

DR. J. A. STRUCKY, of Lexington, Ky., agreed with the principles advocated by Dr. Ballenger. In one hundred and ten turbinectomies he had had hemorrhage in only three, and in none of these had he resorted to packing. Should hemorrhage occur it could be checked by plugging the vestibule. He never packed the attic. In the one hundred and ten cases referred to he had irrigated with saline solution at 110 to 115 degrees F., after which he had touched the parts with a twenty-five per cent solution of argyrol. Nothing more was done. His patients were carried to the bed, not allowed to walk. He was glad Dr. Ballenger had emphasized the fact that these are hospital cases. This operation was not, strictly speaking, minor surgery, because of the close proximity of vital structures, and it was a reflection upon the rhinologist that it had been performed in the office and the patient allowed to go out to his home. He was in thorough accord with what Dr. Ballenger and Dr. Goldstein had said about leaving ragged or contused wounds. Dr. Ballenger's method in selected cases was a good one.

DISCUSSION.

Dr. Max A. Goldstein, of St. Louis, said he did use a dressing after intra-nasal operations. The surgery of the nose was no different from the surgery of any other portion of the human anatomy. Intra-nasal operations were open wounds, with a tendency to bleeding in the majority of cases, and the applications of a dressing was thoroughly surgical and would save many misgivings and worries. The cause of infection was not the use of the dressing, but the too long retention of it. A dressing of strips of medicated gauze left in the nose no longer than twenty-four hours would overcome many of the dangers of subsequent bleedings. The majority of cases would bleed. He was in accord with Dr. Ballenger as to the importance of securing a clean wound, as tags of tissue and bruised surfaces were the cause of much bleeding. A dressing left in the nose no longer than twenty-four hours rarely caused harm in the way of secretion, retention and subsequent infection. He had occasionally had subsequent tonsillitis and sometimes irritation, but never suppuration in the ear; but he did regard this as sufficient reason for abandoning the tampon after intra-nasal operation.

DR. GEORGE L. RICHARDS, of Fall River, Mass., rose to the defense of the nasal tampon. He had read a paper three years ago in which he advocated the use of a nasal tampon, after removal of the middle turbinate, in which the following was employed:

R. Bismuth subnit.

Thymol iodid aa 3 iss 6

Ung. zinc oxid

Petrolati aa 3 i 30

This dressing prevented the sticking of any of the fibers of gauze or cotton, it had a certain elasticity, and the surfaces did not bleed when it was removed.

DR. THOMAS CHEW WORTHINGTON, of Baltimore, Mr., was interested in the operation as described by Dr. Ballenger. There were many points about the operation which should appeal to the operator. He held that the operator who was not skillful enough to use the instruments should not operate at all. He had found that his patients do better and have less reaction when a light dressing is employed in the middle meatus. The important point, however, was not so much the bleeding as the infection, against which nothing, to his knowledge, would insure one. He referred in this connection to the valuable work of Dr. S. J. Crow, of the Johns Hopkins Hun-

terian Laboratory, and Dr. Harvey Cushing, with urotropin. It had been found that in animals put on urotropin several days before and following operation it was much more difficult to produce meningitis, and even to a much less extent after withdrawal was the cerebro-spinal fluid infected when urotropin had been used. He had employed it in a number of cases and had thought the reaction less after operation on the fronto-ethmoidal cells than in those cases where it had not been used. He had not used it in a sufficient number of nasal accessory sinus cases to warrant definite conclusions, but the experiment would indicate that this is a helpful field of investigation.

DR. THOMAS J. HARRIS, of New York City, considered that Dr. Ballinger's paper dealt with one of the most important subjects that could come before the society. In its broad general outlines he heartily concurred. In connection with the question of sterilization he called attention to a paper recently presented by Dr. Frederick C. Cobb of Boston, Mass., relative to the sterilizing power of the nose. The author showed that the interior of the nose is sterile, and that the various statements to the effect that a variety of bacteria can be found in this locality are faulty, because the anterior naris is not properly treated before going into the interior of the nose. This emphasized the importance of working under proper conditions. During the past ten years he had abandoned the use of the tampon, and his results had been better than before. This was properly a hospital operation. He hoped in his closing remarks Dr. Ballenger would have something to say concerning complications in the ear. In this connection he cited two cases which had recently come under his observation. In one case the antrum of Highmore was opened under the most careful antiseptic precautions, and a quantity of pus evacuated. This was followed immediately by infection of the middle ear, necessitating operation finally on the mastoid. In the second case merely the posterior tip of the inferior turbinated was removed with the cold-wire snare, under proper precautions, and this was followed immediately by serious infection of the middle ear. In each case there was a question as to the passage of the pus from the Eustachian tube to the middle ear. After the use of the cautery or the cold-wire snare he had had well-defined lacunar tonsillitis.

DR. GEORGE F. KEIPER, of Lafayette, Ind., emphasized the importance of having the patient in as good physical condition as possible before operation, and called attention to the fact that in many

instances subsequent complications were traceable to failure in this regard. He assumed the middle ground, so to speak, in the matter of tamponing the nose. The tendency of the patient to bleeding should be ascertained before operation, but in any event the individual should be kept under observation for an hour or two afterward. If hemorrhage did not occur in that time it would not be apt to do so. The use of gelatin had been helpful in these cases. He insisted also, in addition to the last point mentioned by Dr. Ballenger, that wounds in the nose be left alone as far as possible, because they are healing under an aseptic blood clot. Meddlesomeness in after-treatment was to be deprecated.

DR. CHARLES W. RICHARDSON, of Washington, D. C., called attention to the fact that several years ago at the meeting of the American Medical Association at Milwaukee he first presented the subject of non-tamponing in all operations in the nasal chamber. He was roundly criticised by some of the older members of the section, who questioned the wisdom of the procedure. Since that time he had not tamponed in the nasal chamber for the purpose of preventing hemorrhage at the time of operation. Under some conditions everyone resorts to tamponing, as for example, in the submucous operation, when the tampon is used not to prevent hemorrhage but to bring the flaps into position and to prevent hematoma. The tampon is also used in the antral operation, but not for the purpose of controlling hemorrhage. Hemorrhage was a factor which might or might not play a part in any operation in the nasal chambers. The more perfect the operation the less the likelihood of subsequent hemorrhage. If tags of mucosa be left, or if the vessels be irregularly cut, hemorrhage is apt to occur. The only method which he had employed for the past four or five years for the purpose of preventing hemorrhage was to go over the wound surfaces with collodion dressing. With the exception of one case where secondary hemorrhage followed the submucous operation, he had not been called upon to control secondary bleeding. He had had very few tonsillar infections, and an occasional infection of the ear. He had observed that those cases in which there was secondary infection of the ears were the ones which bled most at the time of operation or subsequently.

DR. STEPHEN H. LUTZ, of Brooklyn, N. Y., advocated giving the patient calcium chlorid for forty-eight hours, after proper preparation for the operation. A clean operation, with as few strokes as possible, should then be done, with no packing. The patient should

be instructed as to the proper manner of blowing the nose. He believed that the greater number of cases of infection of the ear and accessory sinuses were due to the ignorance concerning this seemingly insignificant point. If hemorrhage should occur, packing should be employed, a piece of cargile membrane being first placed over the wound surface.

PROFESSOR CHIARI agreed with Dr. Ballenger that in many cases no plugging was needed. There was a difference in cases, however, and the method of procedure should be dependent upon the individual case. When the nose was clean, without preliminary infection, one could operate and care for the patient in whatever manner might be desired. In any case it was better to operate in a hospital in order that the patient might be under observation after operation until the danger of hemorrhage had passed. He had observed that when cocain and adrenalin were used the bleeding came later, sometimes two or three hours later, and under these circumstances it was better to keep the patient under observation. He had never seen very profuse hemorrhage in operations upon the middle turbinated bone, but when the inferior turbinate was cut there was apt to be strong bleeding. In the latter cases he always used the tampon, leaving it in the nose for three days. When removed after twenty-four or forty-eight hours profuse hemorrhage nearly always followed. Where the middle turbinated bone in a clean nose, had been removed hemorrhage was very rare. There might in such cases be infection of the tonsil.

DR. CHARLES GRAEF, of New York City, did not agree with Dr. Goldstein's statement that there is no difference between the operative field in the nose and elsewhere; on the contrary, he considered the difference very great. When the nose was packed there resulted swelling, similar to that noted in the orbit. He had followed the routine laid down by Professor Chiari. He could not recall a case where he had found it necessary to pack the middle turbinate. He always put in a Bernays sponge when removing the lower turbinate, leaving it in for forty-eight hours. He generally used the cargile membrane also. Peroxid of hydrogen, one to four, dropped in with a medicine dropper, exerted a styptic effect.

DR. HOLMES concurred in the position taken by Dr. Ballenger and Professor Chiari. He had a record of four thousand intranasal operations upon private patients, the class of patients whose subsequent history it is possible to follow in order to study results. In the early years of his practice he packed the nose after operation

and sent the patient home; after a little he took them to the hospital, and now he demanded that not only shall they go into the hospital, but that they go in the day before, have a cathartic and be otherwise treated, just as if they were to be given an anesthetic. It was but just to the patient that if the operation was sufficiently grave to jeopardize life it should not be regarded as lightly as was so often the case. His patients walked to bed, were put on moderately light diet, and were kept under these conditions for three of four days. As a rule sterile noses need no operation, the necessity for which is due to a pathological condition of the mucous membrane, and for that reason, perhaps, one seldom had to deal with sterile noses.

DR. NORVAL H. PIERCE, of Chicago, Ill., at Dr. Ballenger's request, explained the method of testing the coagulability of the blood previous to intranasal operations, or whenever this information is desired. A drop of the blood to be tested was placed upon a cover-glass or slide and, with a paracentesis needle or scalpel, lines were drawn through it for about half a minute. Under normal conditions after half a minute or so it would be found that the coagulum passes beyond the circumference of the drop. Where the blood is incompletely coagulable it would be five minutes before the coagulum would follow the point of the knife or needle.

DR. BALLENGER, in closing the discussion reiterated the fact that in his experience very few patients bleed sufficiently to require the use of the tampon. He was interested to hear Dr. Goldstein say that his experience had been just the reverse. He agreed with Dr. Richards that, when a tampon is used, it should be prepared, either the bismuth gauze or gauze dipped in compound tincture of benzoin, and lightly packed. Irrigation before and immediately after operation, as suggested by Dr. Stucky, was important. Dr. Worthington's suggestion with reference to urotropin was new to him, but it seemed to be a valuable one, and one which he would investigate in future. Dr. Lutz had explained the occurrence of mastoiditis, tonsillitis, etc., after these operations—the incorrect method of blowing the nose. This should be done gently, only one side of the nose being compressed at the time in order that there may be free projection of the secretion. The preparation of the patient, as suggested by Dr. Keiper and Dr. Holmes, was very important. There were so many bleeders, not necessarily hemophiliacs, that it was wise to make a test of the coagulability of the blood, as described by Dr. Pierce. He had used the collodion dressing, the ideal dress-

ing for certain intranasal wounds, which could be left on until it sloughs off several days later. He was very glad to hear Professor Chiari, whose experience had been longer and more extensive, agree with his views, and felt more than ever convinced that he was on safe ground.

Intra-nasal Frontal Sinus Operation: The Accessibility of the Sinus and the Prognosis of the Operation. By THOMAS C. WORTHINGTON, M. D., Baltimore, Md.

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DISCUSSION.

DR. B. R. SHURLY, of Detroit, Mich., emphasized the importance of X-ray examination in cases of sinus disease. He cited a case of caries of the bone of the frontal sinus, with no intranasal symptoms whatever, except terrific pain, in which the diagnosis was made by means of X-ray. Any other method of diagnosis would have failed. This class of cases required external operation. The intranasal route was certainly the ideal method wherever possible.

DR. WILLIAM L. BALLENGER, of Chicago, said his experience covered this field rather widely, though he had not followed the method of operating suggested by the author of the paper. He was familiar with Dr. Good's method, and had seen him operate, but he did not believe the procedure necessary. Dr. Ingals had reported, by his method, ninety-five per cent of cures in cases in which the floor of the frontal sinus was opened. The speaker did not believe it necessary to remove the floor of the frontal sinus. He had had no deaths in over one hundred cases operated upon by his method of exenteration of the ethmoidal cells with the middle turbinate *en masse*. The frontal sinus and fronto-nasal duct extended down to the infundibulum, the frontal sinus draining into the infundibulum, also the maxillary sinus. As a rule the obstruction was at the mouth of the infundibulum. By removing the ethmoidal cells and the middle turbinate a large percentage of cures could be obtained without undertaking what he believed to be a comparatively dangerous method of procedure. He recommended ethmoid exenteration rather than the removal of the floor of the frontal sinus. Referring to the question of skiagraphy, he said it would not show whether the case is suppurative or catarrhal, nor would it show whether the bone was denuded of mucous membrane. The other clinical data must be considered in deciding the question of operation. The skiagraph determines the size, outline and subdivisions of the frontal sinus.

DR. WORTHINGTON, in closing the discussion, said he had operated upon several hundred of these cases, and in his early experience he had had to operate the second time in so many instances that he felt that these operations were not sufficiently extensive, unless the frontal sinus had been opened. He had found the X-ray a great aid in enabling him to determine the location and extent of the sinus disease. The danger was not in entering the frontal sinus, but in the ethmoidal operation. The operation was safe, and he entered the sinus if there was any indication whatsoever for doing so.

The Present Status of the Surgical Treatment of Chronic Purulent Disease of the Nasal and of the Cellular Spaces: A Comparison. By A. J. N. REIK, M. D., Baltimore, Md.

(Published in full in the November, 1909, issue of THE LARYNGOSCOPE.)

The author makes a comparison of the anatomical and histological structures of the mastoidal and nasal accessory sinuses. A parallel is drawn between the affections of the two regions, their normal physiological and abnormal pathological processes being considered. The development of otologic surgery in relation to suppurative otitis media is reviewed, and a comparison made between the situation in the ear with that which confronts the rhinologist. The application of similar rules of treatment to nasal diseases was advocated. In considering the surgical procedure in cases of disease of the sinuses the author warned against "that blind conservatism which so long retarded the advance of thorough otological surgery, that blind conservatism which so often begets in its turn a blind radicalism."

DR. HOLMES said there had been a tendency of late toward too great conservatism, but incomplete operations were not good surgery, and when intranasal work was attempted it should be done thoroughly, not partially. Even with the radical Killian operation the most beautiful results could be obtained, with very little deformity, providing the bridge be made even wider than recommended by Killian.

Intestinal Auto-Intoxication as a Factor in the Causation of Pathologic Conditions of the Ear, Nose and Throat. By J. A. SRUCKY, M. D., Lexington, Ky.

Further observation, confirmed by clinical and laboratory data, substantiate the views already expressed by the author as to the cause of lithomic naso-pharyngeal troubles. The question of intestinal auto-intoxication, toxemia and lithemia has at last

gained the attention it deserves, and the results and treatment of putrefaction and toxemia originating in the intestinal canal have become matters of recognized importance, not only to the general practitioner but to the oto-rhinologist. Unsatisfactory results obtained after prolonged surgical and local treatment of some of the diseases of the ear, nose and throat have stimulated a more careful search for the explanation of the unsatisfactory results of time-honored methods of treatment. In several hundred cases of diseases of the nasal accessory sinuses, middle and internal ear, in which surgical interference was not indicated and in all in which it was indicated and operative procedure resorted to, the author has found unmistakable and marked evidence of toxemia of intestinal origin, as shown by excessive quantity of indican in the urine, and by the fact that when the condition causing this was removed there was decided amelioration or entire relief of the disease. The condition known as lithemia sometimes brings about contraction of the circulation, resulting in hyperemia or ischemia with venous stasis. Quinine and salicylates cause tinnitus, probably by producing hyperemia of the labyrinth, as they increase the blood tension until actual toxic effects are manifested, when the tension is reduced. He has frequently seen the same conditions result from imperfect or over nutrition and defective elimination. Retention in the intestinal canal of toxins which, owing to disturbed body chemistry are manufactured daily and remain in the system, results in a protest from the irritated nerves and poisoned cells, manifested in rheumatic pains, asthmatic attacks, vertigo, obscure neuroses of the eye, ear, nose and throat, all these being evidences of systemic poisoning. This poison the author has almost invariably found to be indican in the urine. Prolonged interference with function due to toxemia, lithemia, etc., may result in organic changes. Foods and drugs once in the circulation select the nervous function which they specifically derange. Lithemic and uremic poisons must accumulate a long time before their effects become manifest. More attention should be given to radical systemic treatment and hygienic living in the management of pathologic conditions of the ear, nose and throat.

DR. CHARLES N. COX, of Brooklyn, N. Y., said the subject of intestinal auto-intoxication was one of growing interest, not only to the general practitioner but to the specialist as well, as many obscure and baffling conditions were thereby explained. Gastro-intestinal disturbances, whether of toxic origin or not, frequently gave rise to aural, nasal and pharyngeal disturbances. It was

well known that vertigo accompanies certain forms of indigestion known as "biliousness," hepatic torpor, etc. When it was remembered that one of the avenues of elimination of the poisons of intestinal putrefaction is mucous membrane, the importance of frequent congestions of nasal and pharyngeal mucous membrane would be realized. Chronic pharyngitis, especially of the follicular variety, was almost invariably associated with some form of fermentative dyspepsia. The first symptoms of coryza was not infrequently flatulence, and perhaps a vague sense of discomfort in the stomach and intestines. A common phenomenon was a stuffy, congested condition of the nasal passages after the ingestion of food and drink to an inordinate degree, or the consumption of that of a deleterious character. This was a factor of the greatest importance in the management of cases of so-called post-nasal catarrh, in many of which local treatment was of little avail until the alimentary canal was thoroughly unloaded, and the nasal and pharyngeal mucous membrane relieved, by regulating the diet, of the necessity of ridding the system of effete materials absorbed from the intestinal canal. There was another side to this question, namely, the effect that diseases of the nose and throat may have upon the production of intestinal putrefaction. In chronic nasal catarrh, atrophic rhinitis, sinusitis, adenoids, and chronic inflammation of the tonsillar crypts, there occurred, during sleep, when the stomach is empty and contains no hydrochloric acid, a constant deglutition of purulent material filled with more or less virulent bacteria. This continual source of infection was certainly deserving of recognition, as it was undoubtedly the key to many therapeutic failures, and furnished a valuable indication for treatment preliminary to that of the intestinal tract.

DR. B. R. SHURLY, of Detroit, Mich., was glad to hear a paper related to internal medicine, and thought it a good idea to have attention directed to this class of cases. In his experience calomel had proved of value in the management of many of these cases. It should be remembered that the cause of every case of vertigo was not to be found by aural examination, and that urinalysis, particularly with reference to the detection of indican, would clear up many problems of diagnosis.

DR. CHARLES F. MCGAHAN, of Aiken, S. C., agreed with the remarks of Dr. Shurly. A wholesome mixed diet, thorough mastication, and rest before eating, were important items in the management of the cases under consideration. He mentioned in this

connection the work of Dr. Emil Fischer, and outlined what he considered a proper mixed diet for such patients.

DR. STUCKY, in closing the discussion, said he proposed to present one more paper on this subject, in which he would give the results of more than one thousand examinations of urine and a large number of examinations of feces, in various conditions, some of which had been mentioned by Dr. Cox.

New Facts in the Physiology of Hearing.

PROFESSOR E. W. SCRIPTURE read this paper by invitation. It was illustrated by lantern slide representations of sound waves set in motion by spoken words, and by various experiments. The process of hearing a sound consists of three stages: First, physical vibrations in the air, representing a certain amount of physical energy, reach the ear; second, this energy is converted into mechanical movement and then into some form of chemical or electrical energy that traverses the nerves to the brain; third, the production of mental phenomena which are termed sensations of sound. One method of studying the physiology of hearing consists in finding what sensations are aroused by different forms of physical vibrations and what vibrations correspond to various sensations. The first problem in the work was to find the most accurate method of obtaining the sound waves. This was accomplished by means of a gramophone. A record was obtained on a gramophone disc. The sound record on a gramophone disc consists of a groove of even depth with sidewise deviations which correspond to the vibrations of the air. The disc is placed on a special apparatus and turned very slowly. A steel point in a long light lever rests in the sound groove just as the steel point of the reproducer does. The deviations in the groove make the lever move back and forth. A fine point at the end of the lever records the vibrations on a long band of smoked paper. There is thus presented to the eye a permanent record of the original sound vibrations, which can be studied, measured and analyzed at leisure.

Various curves, obtained in the above manner, were thrown upon the screen and analyzed by the speaker. Such curves constantly reveal facts that the ear does not notice. Often the ear learns to hear the peculiarity of a sound after the eye has called attention to it. What the mind has not been trained to perceive, it often neglects to hear. Few suspect that there is a melody of speech that is far more complicated and more highly developed than the melody of song. From the speech tracings it is possible to study

the speech melody with the utmost accuracy, and to become familiar with the factors of speech whereby certain emotions are aroused in the mind of the hearer. It is by the sense of hearing that one knows how the voice rises and falls in pitch. For other people's voices this sense is very accurate, but for one's own voice it is very defective. An arrangement was presented for indicating to the eye when the singer sings off pitch and just how badly he does it. The fundamental principle of appeal to the eye in order to train the ear to correct the faults of the voice can be used in the most varied ways to correct every defect of speech. Many devices have been developed for this purpose.

The Phenomena of Vestibular Irritation in Acute Labyrinthine Disease, with Special Reference to the Studies of Dr. Barany of Vienna. By P. D. KERRISON, M. D., New York City.

However interesting the earlier experiments and hypotheses may have been, as bearing upon the physiology and function of the semicircular canals, the studies of Flourens in 1824 to 1828 and the later experiments of Professor Ewald of Strassburg, must be recognized as the basis upon which the present clearer understanding of the phenomena of vestibular irritation mainly rests.

Ewald's experiments, made separately upon the three semicircular canals of pigeons, established definitely the following facts: (1) Excitation of a single canal can produce nystagmus only in a plane corresponding to the plane of the canal; (2) by reverse movements of the endolymph in any single canal, we can produce a reversal of the direction of the induced nystagmus, and (3) the strongest nystagmus which can be induced by irritation of a single canal is always in the direction of the ear experimented upon. Displacement of endolymph in any particular canal gives rise to nystagmus in which the eyes move in a plane parallel to the plane of the canal, and of which the slow movement is always in the direction in which the endolymph moves. Nystagmus induced by endolymph displacement in any particular canal is in a plane parallel with the plane of that canal, and in the direction opposite to that of the endolymph displacement. The distinguishing features of vestibular nystagmus and physiological nystagmus are discussed in detail by the author. The rotation or turning experiment is described, and rotational nystagmus explained in accordance with Ewald's experiments. The rotation experiment is particularly instructive since it enables one to induce at will different forms of nystagmus, and to study the accompanying variations of vertigo and ataxia.

The technic and significance of the caloric reactions, first established by Barany, are described, and the following deductions drawn therefrom: (1) If irrigation of the diseased ear is followed by normal reactions, it may be assumed with confidence that the labyrinth has been the seat of a comparatively mild lesion which has undergone resolution, leaving the vestibular structures intact and functioning. The prognosis is good. (2) If, on the other hand, after irrigation with heat or cold, persisted in from three to five minutes, no caloric reactions are induced, it may be concluded that the labyrinth is the seat of a suppurative process which has either destroyed the vestibular structures, or at least has resulted in injury sufficiently severe to have annulled vestibular function or irritability to thermal stimuli. This condition describes the so-called latent stage of suppuratis, in which the ultimate prognosis is grave. Barany's theories are contrasted with those of Von Stein. Barany attaches little importance to disturbed equilibrium as a diagnostic sign in the latent or chronic stage of suppurative labyrinthitis, whereas Von Stein has elaborated exhaustive methods of eliciting symptoms of disturbed equilibrium. Barany believes that in the chronic stage of suppurative labyrinthitis the vestibular apparatus, in the great majority of cases, is no longer responsive to the usual stimuli, and that it is therefore illogical to expect disturbance of equilibrium as a result of diseases localized in an organ which is not essential to static or dynamic equilibrium. Von Stein apparently believes that at no stage of suppurative labyrinthitis are disturbances of equilibrium absent, and that while these disturbances may not interfere with the patient's ability to walk or stand, normally, they may be clearly demonstrated by requiring him to perform certain acts in which he is not practiced, such as jumping or hopping with eyes closed, standing alternately on one foot and then the other, etc.

DR. WILLIAM L. BALLENGER, of Chicago, referring to the rotation test, said the greatest physiological irritation of the hair cells of the ampulla was on the side toward the canal, and the coarser nystagmatic movements were on the side of the greatest irritation? The flow of the fluid in the canal was toward the ampullae, thus irritating the hair cells on the side of the greatest physiological irritability. This determines the nystagmus toward the direction of turning, i. e., a horizontal nystagmus, as only the horizontal canal is affected by the turning. In making the caloric test it should be remembered that the side of greatest physiological irritability of the hair cells of the ampullae of the anterior vertical canal is opposite

to that in the horizontal canal, namely, on the side toward the utriculus or vestibule. It is apparent, therefore, that in the warm caloric test the fluid rising strikes the hair cells of the anterior vertical canal on the side of greatest physiological irritability and produces rotary nystagmus. If cold water is used the fluid of the anterior vertical canal is downward toward the utriculus, which produces a weaker rotary nystagmus, as the irritation is upon the side of the least physiological irritability. The fluid flows from the utriculus to the ampullae of the horizontal canal and causes horizontal nystagmus, hence a combined rotary and horizontal nystagmus.

DR. GEORGE F. COTT, of Buffalo, N. Y., said that if a patient stands with his feet together and endeavors to walk straight ahead with the eyes closed he will walk at quite an angle towards the side of the disease. The semicircular canals were about the size of a pin and the ampulla about the size of a pin-head, and it was claimed by English otologists that it is a physical impossibility for the fluids to flow when the patient is rotated. As a matter of fact, for all practical purposes, the fluid does flow. If the reflexes have become abolished, one does not get the reaction at the end of two or three minutes. In the caloric test if water is forced in upon the drum-head then the test might be painful. It must be thrown in towards the posterior-inferior wall. In acute cases of perilyabyrinthitis there is quick movement of the eyes to both sides. If twenty, thirty or forty rotations were used one was liable to get after-nystagmus, followed by late after-nystagmus. A difference should be made between infectious and serous labyrinthitis. In acute labyrinthitis, whether infectious or serous, hearing is destroyed, except that in the serous variety perception of high notes is retained. This always recovers in a week or ten days.

DR. EDWARD B. DENCH, of New York City, was glad Dr. Cott had brought up the question of deviation to the affected side, which the speaker had noted in a number of cases of mild infection of the labyrinth. In the early stages of the disease there was nystagmus to the same side; later, however, it was to the opposite side. He agreed with Dr. Kerrison that the balancing tests were unreliable. He did not agree with Dr. Cott with reference to the method of making a differential diagnosis between infectious and serous labyrinthitis. He had under observation several cases in which both labyrinth and semicircular canals had been drained and in which the hearing was fairly good.

DR. NORVAL H. PIERCE, of Chicago, called attention to the fact that unless one exercised care in the amount of force employed in the Barany test a nystagmus might be produced which was mechanical rather than caloric. He used a small stream. He had done a good deal of work with this test and had found that it does not always act in the same way, nor the same at different times in the same individual. One fact was certain; that when a labyrinth is destroyed by a suppurative process the caloric test will be negative. There were many phases of the subject yet to be worked out more definitely.

DR. DENCH cited the case of a young girl who had nystagmus on both sides. The caloric test was negative. The nystagmus and the vomiting persisted, and he was convinced that the trouble was in the cerebellum. He operated and found around the sheath of the auditory nerve a cerebellar abscess.

Dr. Goldstein thought the procedures of Bárány and von Stein would bear modification. He had had a case of otosclerosis in which the caloric reaction was not produced in three minutes. In another case, he had irrigated fifteen minutes before getting the reaction. In the same case, the rotation test produced nystagmus only after turning ten or fifteen minutes.

DR. KERRISON, in closing the discussion, said that in diffuse suppurative labyrinthitis, the hearing was probably always lost, though cases of circumscribed labyrinthitis had been recorded in which considerable hearing power remained. Referring to Dr. Dench's report of a case of labyrinthine suppuration in which useful hearing remained, Dr. Kerrison said that the functional examination of such patients without the use of Barany's noise instrument was sometimes misleading. He cited a case under his observation in which the patient appeared to hear various sounds with the sound ear tightly closed with the finger, but could hear absolutely nothing with Barany's noise instrument in the sound ear.

With reference to Dr. Goldstein's case in which the nystagmus appeared only after fifteen minutes of continuous irrigation, Dr. Kerrison thought that this could hardly be regarded as a caloric reaction, since after fifteen minutes of irrigation with either hot or cold water, the different parts of the semicircular canal system would probably have reached a uniform temperature. Dr. Norval Pierce had alluded to the occasional difficulty, in the caloric test, in determining whether an observed nystagmus was really due to the irrigation. Dr. Kerrison suggested that such a doubt might be

easily settled by using alternately hot and cold water, which should reverse the direction of the nystagmus. This, however, was apt to induce nausea and vomiting.

Local Anesthesia in the Mastoid Operation. By E. W. DAY, M. D., Pittsburg, Pa.

(Published in full in this issue of THE LARYNGOSCOPE).

DISCUSSION.

DR. EDWARD B. DENCH, of New York City, had never employed local anesthesia. For the purpose of controlling hemorrhage he had used subcutaneous injections of adrenalin, stronger than Dr. Day recommends, and had had sloughing afterward. The work reported by Dr. Day marked a distinct advance in otological surgery.

DR. J. A. STUCKY, of Lexington, Ky., heartily endorsed the method described by Dr. Day. He had tried it three times, with varying degrees of success. The degree of anesthesia had a great influence upon the ultimate result of operations upon the mastoid and brain. He had frequently done a radical mastoid operation with one and a half ounces of ether. The average otologist, and the average surgeon as well, gave too much ether. As Dr. Day had said, the painful part of the operation was in the middle ear; therefore, in all radical operations it was his custom to do the middle ear operation first, after which only enough ether was given to keep the patient quiet. He had adopted mixed anesthesia, especially in neurotic individuals, putting the patient pretty well under the influence of an opiate before giving the anesthetic. The personal equation played an important part in the work presented by Dr. Day. The point would finally be reached when these operations would be done under modified anesthesia, and the method advocated by Dr. Day would be generally adopted. In this connection he called attention to coffee as an ideal stimulant.

DR. THOMAS J. HARRIS, of New York City, had had no experience with the infiltration method in operating upon the ear, but it had been his favorite procedure in operations in the nose. The method as described by Dr. Day appealed to him very strongly, at the same time he wished to call attention to the possibilities of danger from its use. He referred to a case in which he had employed it in a healthy adult of thirty for the enucleation of the faucial tonsils. The patient died in three minutes, and it was found upon post-mortem examination that there was a status lymphaticus, the thymus gland weighing eighteen grams. The right heart was

greatly dilated. All indications pointed to thymic asthma, but the adrenalin was the causative factor. A similar case had been reported by Dr. Thomas Hubbard. There was no status lymphaticus, but a submucous resection was done and the patient died on the operating-table. A one-fifth of one per cent. solution of cocain to the amount of $1/12$ grain, and eight to ten minims of 1-1000 adrenalin, were used.

DR. JAMES E. LOGAN, of Kansas City, Mo., complimented Dr. Day very highly for the able contribution he had made to otological literature. He emphasized the value of adrenalin for clearing up the field of operation in general anesthesia. He had never used the hypodermatic injection of cocain as suggested by Dr. Day, and thought that in his hands he would prefer general anesthesia unless it was contra-indicated.

DR. NORTON L. WILSON, of Elizabeth, N. J., said cocain was being used in very much milder strengths than formerly, and the same should apply to adrenalin. One to seven or ten thousand was quite strong enough for obtaining the hemostatic effect.

DR. JOHN F. BARNHILL, of Indianapolis, Ind., said he had always been very much afraid of cocain when injected under the skin or mucous membrane because of an unpleasant personal experience in the early history of the drug. In the past three years he had used alypin, one and one-eighth to one and one-half grains, several hundred times without any ill effects, and with perfect anesthesia. Adrenalin, in one to ten thousand or one to fifteen thousand, when injected under the skin, would give about the same effect as one to five thousand, so that it was not necessary to use it in the strengths referred to by the previous speakers. It was possible that the psychic effect had something to do with such cases as those mentioned by Dr. Harris. It was not improbable that some of the patients operated upon in the upright position, under cocain anesthesia, die of fright.

DR. CHARLES GRAEF, of New York City, said that some years ago this matter was discussed at the New York Academy of Medicine and one of the surgeons present emphasized the value of morphin as an antidote to cocain. Experiments had been made with pigeons, some of which were injected with morphin and then with cocain, while others were given the cocain without the morphin. The latter class died. The speaker had used morphin with cocain for a number of years and had never had a death.

DR. LEE M. HURD, of New York City, thought the psychic element important in the method described by Dr. Day. He cited the case of a young woman upon whom he operated under local anesthesia, using one-tenth of one per cent. cocain with adrenalin. The whole middle ear became absolutely anesthetic. He crushed out the external attic wall, doing almost a Stacke operation in the office, and when it was finished the patient said it did not hurt in the least. Patients were more apt to succumb before than during the operation.

DR. DAY, in closing the discussion, could not understand why anyone should be afraid to undertake the operation under local anesthesia. It was not necessary to use cocain. The important factor was the pressure, and this could be obtained just as well with normal salt solution. He did not agree with the other speakers concerning the importance of the personal equation, nor did he believe that a patient could be talked out of real pain. He had never had sloughing that he could directly attribute to the injection. He did not advocate the use of adrenalin in such strong solutions as had been mentioned. The tube was the only place where it was impossible to get anesthesia from the injection, and here he put in cocain crystals. It was important to get under the periosteum. When the bone is reached the needle should be inserted so that the point is not the pivot point, it should be given a one-quarter turn, the point lifted up and then inserted under the periosteum. When once under the periosteum the fluid could be injected.

Lipoma of the Larynx. By M. A. GOLDSTEIN, M. D., St. Louis.
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Thyroidectomy. By G. F. COTT, M. D., Buffalo, N. Y.

The attention of the laryngologist is frequently called to the peculiar symptoms produced by the diseased thyroid gland. These symptoms are local or constitutional, acute or chronic. The kind and shape of the thyroid gland varies considerably, and its location differs in different patients. It may be submaxillary even to the mastoid, substernal, intrathoracic, or diffuse, covering the front of the neck. In considering the question of treatment it must be borne in mind that a functioning gland is necessary to normal metabolism, and therefore must be preserved. Kocher, who has operated upon more than thirty-five hundred cases, claims that ninety per cent. get well without the knife. When measures other than surgery are adopted it is necessary to treat some cases for weeks and others

for months before much improvement takes place. All cases of goitre are not amenable to operation, such, for example, as retro-sternal and intrathoracic goitres, and those producing exophthalmia when the heart is much involved. Operation is sometimes done for the cosmetic effect in the young, or for the relief of pressure or constitutional symptoms. Occasionally the removal of one lobe is sufficient, especially if the other is only moderately large. The technic of thyroidectomy is described by the author in detail, and a number of cases reported.

DR. B. R. SHURLY, of Detroit, Mich., considered hyperthyroidism one of the most interesting subjects in internal medicine. The general practitioner did not realize how frequent are the atypical conditions of the thyroid, and how many of these patients consult the laryngologist suffering from symptoms in the region of the larynx. A great deal could be done for hyperthyroidism by medicinal measures, and the operation of thyroidectomy should be approached with hesitancy. Ninety per cent. of the cases would be improved by the administration of iodine, by electrolysis, and by the internal treatment which Rogers of New York had so successfully brought before the profession, that is, by the hypodermatic administration of the antitoxin of his own preparation. Every effort should be made to give the patient relief by other measures than surgery. It should be remembered that these glands are sometimes very small, and that small glands may give rise to symptoms out of proportion to their size. Some cases of hyperthyroidism would improve after complete tonsillectomy. The majority of these cases were in women, the proportion being eleven to one. When thyroidectomy was resorted to the most successful procedure was the removal of the gland and the ligation of the superior thyroid artery on the other side.

DR. WILLIAM L. BALLENGER, of Chicago, reported a case upon which he operated a year ago, in which operation was followed by death. He removed the goitre, which was not a very large one, and the wound remained perfectly dry for a week, neither granulating nor suppurating. At the end of one week there was a severe hemorrhage at midnight, which was checked by compression applied by the nurse. The following night at twelve o'clock and every night at that hour for a week, there was another hemorrhage. The point of hemorrhage could never be located, but it seemed to come from the base of the skull rather than from the thyroid wound. The vessels from which it was supposed to come were tied off, but the hemorrhage occurred each night.

DR. JOSEPH H. ABRAHAM, of New York City, referring to the prognosis of carcinoma of the thyroid gland, cited the case of a woman of thirty-eight in whom the trachea was markedly pressed upon by a carcinoma of the thyroid, and the dyspnea was very great. She was operated upon, with relief of the dyspnea, but she died at the end of twenty-four hours.

DR. CHRISTIAN R. HOLMES, of Cincinnati, Ohio, cited two cases in his practice in which there had been persistent neuralgic pain over the mastoid process, which nothing seemed to relieve. In one case an exploratory operation was performed upon the mastoid, but nothing was found. Both patients were neurotic. No goitre was visible in either, but he had recalled the cases in listening to Dr. Cott's paper, and wondered if the reader could throw any light upon them.

DR. COTT, in closing the discussion, said that pain in these cases might be due to pressure from some infiltrated gland not necessarily the thyroid. He agreed with Dr. Jackson concerning the value of tracheo-bronchoscopy, and would suggest also esophagoscopy. The amount of irritation produced in Graves' disease would be apt to make the patient worse. In a case where there was reason to anticipate secondary hemorrhage all vessels should be carefully ligated with silk. If the walls of the vessels are degenerated, or if they are crushed in handling, hemorrhage would result. In Kocher's classical memoir on the subject, 1,453 references since 1870 were given, which shows the enormous progress made the latter part of the last century, very little having been accomplished before that time.

Laryngostomy. CHEVALIER JACKSON, M.D., Pittsburg, Pa.

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DISCUSSION.

DR. WILLIAM L. BALLENGER, of Chicago, had recently seen a case in which this operation was undoubtedly indicated. The patient had accidentally used sixty per cent. carbolic acid as a gargle. Partial stenosis resulted, and he is wearing a canula in the neck.

DR. J. A. STUCKY, of Lexington, Ky., referred to a case, previously reported, in which he had removed half the larynx, and which had remained well, with fairly good voice. He had seen Dundas Grant operate upon a case similar to those described by Dr. Jackson. The patient was a child five years of age. It had worn a tracheotomy tube for a year because of complete closure from cicatricial laryngitis. The three upper tracheal rings and

the larynx were entirely closed. Grant succeeded, after prolonged effort, in passing a small probe. The operation required one and a half hours. He could use no scissors, saw,—nothing to guide him except this little probe. The after-treatment consisted in packing the wound wide open, with the hope of getting cicatrization. The patient was doing very well when the speaker left London. If at that time he had known of Dr. Jackson's method he would have suggested it to the operator. He proposed to try it in future.

Laryngeal Paralysis as an Early Indication of Systemic Disease.

By G. T. Ross, M. D., Montreal, Canada.

Many phases of laryngeal palsy are obscure and require further pathological investigations from the cortex to the nucleus and from the nucleus to the periphery. Disordered function being the only guide for diagnosis where unilateral palsy obtains, without concurrent laryngitis, and without sensory signs, the problem is distinctly difficult. While local objective symptoms may be with or without sensory signs, they may also be with or without grave significance. Constitutional conditions may manifest themselves by laryngeal palsy and other symptoms requiring no skilled aid from the specialist, but systemic treatment alone.

The importance of recognizing the earliest paretic state of the larynx is pointed out, and the necessity for searching for it even where no symptoms point to that organ. The problem of such paresis being of slight importance though long continued, as in pressure from a lymph gland, or the forerunner of serious conditions as in tabes dorsalis, spinal or bulbar disease, is discussed and cases quoted to show how it is sometimes impossible to be accurate.

Three personal cases are cited, two of unilateral palsy, without sensory symptoms, and one bilateral, with sensory symptoms, preceding tabes for six to ten months, laryngitis being absent. Also three cases by Rosenberg of Berlin of unilateral palsy, occurring in acute and chronic laryngitis, lasting three, eight, and thirty-two months respectively. The difficulty of formulating reliable prognosis is discussed.

Nasal Myxo-Sarcoma in a Child of Three Years.

By G. T. Ross, M. D., Montreal, Canada.

E. L., a French Canadian child of three years, had obstructed nasal breathing for six weeks. No history of injury or hereditary cancer. Child well nourished though anemic; no

cough; voice "nasal" in tone; nose bleeding frequent. Examination: Right nares practically normal. Left nares had the vestibule blocked with a greyish yellow mass, soft, friable, covered with pus, encapsulated and bleeding at the slightest touch, no fetor or excoriation. There were no adenoids or hypertrophied tonsils. Operation: Done intra-nasally, with forceps, scissors and electric cautery. Growth found attached to septum at junction of bone and cartilage. Hemorrhage severe. In two weeks recurrence evident, but of smaller size. Operation repeated four times, with intervals of two or three weeks. The growth was found to be less each time. Last operation on November 30. Pathological report: A myxoma which had undergone sarcomatous transformation. May 1, 1909, child examined. Left naris normal except scar tissue on septum. Parents say he is now perfectly well. The prognosis is discussed.

DR. B. R. SHURLY, of Detroit, Mich., called attention to the frequency of bronchial gland enlargement and the importance of laryngoscopic findings in the class of cases referred to in the first paper read by Dr. Ross. It had been estimated that in seventy per cent. of the cases of *tabes dorsalis* there is a specific history. In the majority of these cases glandular enlargement might be anticipated anywhere, especially along the bronchial tree. Many of these cases of laryngeal paralysis clear up under treatment with iodid of potassium.

Dr. Ross, in closing the discussion, said that strictly speaking, the title of his paper should be "Laryngeal Paralysis as an Early Sign of *Tabes Dorsalis*." He had purposely avoided mentioning many other systemic diseases wherein laryngeal paralysis occurred and which it would be interesting to consider in this connection had time permitted. He called especial attention to the reflex action of the spinal accessory nerves in relation to irritation of the pharyngeal plexus as bearing on the still disputed question of the motor nerves supplying the larynx and pharynx, and referred to some clinical evidence he had recently, wherein the reflex action of the spinal accessory was predominant.

The Early Diagnosis of Malignant Disease of the Larynx—Pathology—Prognosis and Treatment. By W. F. CHAPPELL, M. D., New York City.

The early symptoms of malignant disease of the larynx are vague and the clinical picture obscure, and in many instances the patient does not seek competent advice until the condition is far advanced. Continued hoarseness is not given the atten-

tion it deserves by either the patient or the physician. This state of affairs is largely due to the inefficient teaching of laryngology in medical colleges. Many physicians who have been in practice for years are unable to use the laryngoscope, and, in the author's opinion, based upon observation, not one in a hundred of the general practitioners who graduated in medicine prior to 1900, can satisfactorily examine the larynx. When medical colleges the world over graduate men who can examine the larynx as part of their routine work, opportunity will then be offered to see the majority of laryngeal tumors in their earlier stages.

Cancer of the larynx represents about one per cent of all carcinomata in general, and its diagnosis in the early stage is conceded by all writers to be especially difficult. According to Semon, not one single sign in the early stage of malignant disease of the larynx is in itself so characteristic that it establishes with absolute certainty the malignant nature of the growth. The early recognition of the disease is possible, in the majority of cases, with the assistance of the laryngoscope, Sendziak holding that in most cases it may be diagnosed exclusively on the basis of the laryngoscopic picture, without resorting to the microscope. Certain contributory evidence, such as heredity, may be considered in arriving at a diagnosis.

For convenience of description the author considered the subject under the usual divisions of intrinsic and extrinsic cancer, discussing the questions of location, symptomatology and diagnosis of each class of cases. Referring to the microscopical examination of sections of malignant growths of the larynx as an aid in diagnosis, the author held that if the report is positive as to malignancy, taken with the clinical symptoms, it could be safely assumed that a malignant tumor is to be dealt with; if, on the other hand, the clinical signs and appearances did not support the microscopical diagnosis, he would consider the clinical picture much the more important guide in the matter of treatment. He has had a number of cases, some of which he cited, where several examinations of sections of the tumor were made by different observers, all of whom gave a positive diagnosis of laryngeal cancer, and where clinical symptoms and subsequent history proved them to be wrong. The author had nothing new to offer concerning the pathology of the disease, but quoted from a recent paper on the subject by Dr. Jonathan Wright. In view of the constantly increasing evidence of the total unreliability of the microscope alone as a means of diagnosis in cancer of the larynx, it is probable that some of the so-called com-

plete cures were in reality not cancer at all. Clinical cancer of the larynx is always serious, but a "microscopic cancer" may give a more favorable prognosis. Various degrees of malignancy, heredity, the original site of the growth, age of patient, early discovery, and the nature of the treatment all have a bearing upon the prognosis. When a positive diagnosis of intrinsic cancer of the larynx is made operative measures are the only means which should be employed. Thyrotomy is suitable when the growth is limited to the vocal cords or the soft parts of the interior of the larynx. In regard to post-operative security from recurrence, it is nearly equal in value to laryngectomy, whereas the safety of the operative intervention as such, renders it infinitely superior to total or even partial resection of the larynx. Exploratory thyrotomy is justifiable in a suspicious case, though Jackson's tubes have removed the necessity for exploratory measures in the majority of cases. In extrinsic cancer of the larynx, in a patient under fifty-five years of age, when the tumor has been discovered early, total extirpation of the larynx is indicated, excepting when the new growth is confined to the epiglottis. From the point of view of recurrence this procedure is superior to all other measures. The author does not advise total extirpation of the larynx in a patient over fifty-five, even in early cases.

PROFESSOR CHIARI said he had been interested in Dr. Chappell's remarks concerning the study of laryngology in medical colleges. In Austria students were not obliged, up to 1893, to study laryngology or to be examined upon the subject, consequently when they left college they knew very little about this very important branch. Since 1893 students in Austria were obliged to study laryngology, but there was no examination. While the instruction in this regard was much better in America than in Europe, the student upon leaving college could not know very much about the subject, inasmuch as it requires years of practice to encompass it. He agreed with the proposition that the diagnosis should be made by clinical as well as microscopic examination. In every suspicious case he gave a section to a competent pathologist for examination, and in no instance had he found it necessary to contradict the pathological diagnosis. In many instances the report had come that the tumor was not malignant, but that it was suspicious, and in such cases he always waited before operating. In many cases the diagnosis was very uncertain. The differential diagnosis between syphilis and cancer is very difficult. He cited two illustrative cases which had come under his observation. The first, a man fifty years of age,

had been hoarse for two months; he had stenosis of the larynx and could not breathe. He had been to an excellent laryngologist who pronounced the condition due to cancer of the larynx and recommended immediate operation. The speaker found, upon examination, that there was inflammation of the subglottic space on either side.

Cancer never begins on both side of the larynx. In this case both subglottic folds were of the same dimensions. Believing it to be subglottic gumma, the patient was put upon potassium iodid, and in two weeks he was much better. In the second case the patient, a physician, had been told that he had cancer of the epiglottis. The epiglottis was found to be ulcerated and surrounded by papillar infiltration, and on the left arytenoid there was a small area of ulceration and infiltration. The mobility of the vocal cords was quite good. From these clinical appearances the speaker judged the condition to be non-malignant. He extirpated some of the papillomatous tissue around the ulcer and gave it to one of his younger assistants for microscopic examination. It was pronounced malignant. But when Professor Chiari examined the microscopic preparations he found that it was pachydermia. The patient recovered entirely under anti-syphilitic treatment. When an excellent pathologist had rendered the diagnosis of cancer it had been his custom to perform the external operation. When a negative pathological report was rendered he waited until the clinical symptoms warranted operation. He had not had the same experience as had Dr. Chappell with the radical operation. He had performed total extirpation in patients more than fifty-five years of age, and Glueck had operated in many such cases with perfect success. It was true that a patient without a larynx was a pitiable object, but many of them learn to speak quite well. Glueck had demonstrated that they learn to speak with the pharyngeal voice. One patient, a man, could be distinctly heard in a large room. Part of the esophagus, the tongue, and part of the thyroid gland had also been removed and the patient had a large fistula, and yet he could speak quite well, he could swallow, and seemed content to live. In such an unfortunate condition as cancer of the larynx one was not only allowed, but perhaps obliged to do a radical operation, but the patient should be informed of the consequences of such an operation, of the necessity for wearing a canula throughout the remainder of life, and of having to learn to speak.

DR. GEORGE F. KEIPER, of Lafayette, Ind., thought the laryngologist responsible for some of the pathological reports being so in-

definite. As a rule, when it was desired to remove a part of a growth for examination the tendency was to bite off the most prominent part, whereas a portion of normal tissue adjacent to the growth should also be submitted in order that the pathologist may see the difference between the normal and pathological structure.

DR. GEORGE F. COTT, of Buffalo, N. Y., said McKenzie claimed that the diagnosis of malignant disease of the larynx should be made and operated upon by clinical examination. For this statement Sir Felix Semon took him to task. The speaker did not believe it safe to wait for the clinical diagnosis, but also used the microscope. He mentioned a case which had been treated for six months for bronchitis. He examined the patient, found the growth, removed a piece for examination, then took her to the hospital intending to extirpate the entire larynx. At the time of operation he found that the right side had cleared up, so he extirpated only half of the larynx. Three months later the other side became involved, but this was cured by X-ray treatments, the only case on record at that time (1901) so far as he knew. The patient is now sixty-one years old and has been well eight years, but wears a tracheal tube. This was the case mentioned by Professor Chiari in his oration yesterday.

DR. B. R. SHURLY spoke of the borderland cases in which it was necessary to differentiate between syphilis and carcinoma. Dr. Chappell had mentioned only the iodide of potassium. The biniodide of mercury in addition to the iodide of potassium would enable one to get the patient rapidly under the influence of the iodide. The mixed treatment was advantageous in many instances, but in some cases it was impossible to give it without seriously disturbing the stomach, in which case hypodermic methods should be used. He had employed the Wasserman test in many suspected cases of syphilis in the upper respiratory tract and had found it helpful. Jackson's autoscope for obtaining pieces for microscopic examination was useful.

DR. CHAPPEL, in closing the discussion, was interested to know that in Professor Chiari's country examination of the larynx was not obligatory in medical colleges, as it is in most colleges in this country. In times past laryngology, otology and rhinology were practically ignored, but were now given more attention by medical colleges and the profession at large, and the upper air tract had come to be recognized as a great avenue of infection. He had not employed the tests referred to by the previous speakers. Ordi-

narily he gave mercury, as suggested by Dr. Shurly. He had found that it exerts a more decided effect upon the cartilage than the iodid of potassium in syphilis of the larynx.

X-Ray Examination of the Mastoid Region. By S. IGLAUER, M. D., Cincinnati, Ohio.

Radiography has been successfully employed in rhinology, especially in the examination of the accessory sinuses. The difficulties attending the radiography of the mastoid region are due to its position at the base of the skull. The author has found that radiograms taken in oblique profile of the mastoid region give excellent results. The technic employed is described in detail. Such radiograms delineate the internal anatomy of the temporal bone, showing in particular the external auditory meatus, the mastoid cells, the floor of the middle fossa, and frequently the sigmoid groove. Osteo-sclerosis of the mastoid bone, following prolonged otorrhea, may be readily diagnosed by X-ray examination. Pus and granulations will probably show in the skiagram, but the X-ray diagnosis of acute mastoiditis is at times attended with some difficulty. Plates and drawings were exhibited, and three radiograms controlled by operation reported.

DR. S. J. KOPETZKY, of New York City, said we were all very much indebted to Dr. Iglauer for having worked out the angle from which the picture could most advantageously be taken, that is, with the least amount of confusing and obscuring shadows. He feared, however, that the picturing of the mastoid process would fail to give results of practical use to the surgeon. Dr. Kopetzky had tried getting X-ray information of the mastoid process, both from the lateral and the antero-posterior position. But the great amount of distortion and overlying shadows had been very discouraging. Regarding Dr. Iglauer's work, Dr. Kopetzky could only call attention to the fact that the distance of the plate from the focal point of the X-ray tube, and the divergence of the rays brought upon the plate a picture whose dimensions were different from those of the object photographed. This resulted in a somewhat distorted picture. The inter-relationship of the anatomical structures was changed, and therefore the surgeon could not depend upon the plate for data to be used in operating. For instance, the sigmoid sinus might be shown upon the plate to be separated some distance from the posterior wall of the external auditory meatus, yet on the operating table it might in the given instance, be found in juxtaposition. This change in the anatomical relationship was due to the divergence of the rays, which diverge

in direct proportion to the distance at which the object photographed is placed from the plate, and likewise, as the object photographed is placed from the focal point of the tube. Until a table of correction or verification is given, wherein measurements taken on the plate are controlled by actual measurements taken upon the operating table or upon the cadaver, giving the distances of the object pictured, both from the focal point of the tube and from the plate, practical results from the X-ray pictures of the mastoid process were hardly to be expected.

DR. HOLMES had had the pleasure of having Dr. Iglauer associated with him at the University in Cincinnati, where he had observed and been very much interested in the work just reported. He had recognized the importance of such work, and wished to congratulate Dr. Iglauer upon what he had thus far accomplished. It was always well, however, when anything new was presented, not to draw too positive conclusions therefrom, but to reserve decision concerning its merits until, by prolonged experience, its value had been demonstrated. He called attention to a recent paper by a Japanese student working in Germany, in which similar work upon the cadaver was reported *in extenso*. It was to be hoped that the work would be followed up and that much of value would come from it.

DR. BALLENGER asked Dr. Iglauer how much distortion was made by the angle which he recommended. He had found enormous distortion according to the position of the head in making X-ray plates of the frontal sinus. In a twenty-five degree angle and a right angle exposure he had found the frontal sinus to be three times as large in one plate as the other. Distortion may occur and might cause damage in operating if the plates were depended upon.

DR. IGLAUER, in closing the discussion, referring to the point brought out by Dr. Kopetzky, said it would have been advisable to have made actual measurements upon the plates and upon the bones. Some of the radiograms of dry specimens seemed to be exact reproductions of the bones. Whatever distortion occurred was uniform, so that the relative enlargement was the same. He had nearly always found, in opening the mastoid, that conditions were exactly as indicated in the picture. The speaker expressed his appreciation of the encouragement Dr. Holmes had given him in the work, which he hoped to carry much further. The conclusions drawn were not altogether his own, and he believed they would stand.

Report of Probable Case of Sarcoma of the Sphenoid Sinus.

By DUNBAR ROY, M. D., Atlanta, Ga.

The patient, a man of fifty-six years of age, sought medical advice on account of a diminished hearing in the left ear. This gradually became more marked, and passage of the Eustachian catheter on the affected side became impossible. This was followed by exophthalmos and total paralysis of the external rectus muscle. Later the lesion became severe. Exploratory craniectomy was resorted to, and was followed by the patient's death later. The case is given in detail and the literature bearing upon the subject reviewed.

DR. ALFRED WIENER, of New York City, thought that if one accept Cushing's theory that optic neuritis is due to increased intracranial pressure and disappears after decompressive operations upon the skull, in Dr. Roy's case the absence of optic neuritis could be accounted for, on the basis that an artificial decompressive operation had in reality been performed by the tumor itself.

Incision for Submucous Resection. By S. YANKAUER, M. D., New York City.

In order to make the submucous resection an "open" operation, it is necessary to design the incision so that the lower anterior part of the septum, the body of the deviation will be exposed to view as well as the cartilaginous parts. For this purpose the incision is planned as previously described by the writer, i. e., a horizontal extension outwards across the lower border of the nostril toward the outer wall of the nose.

DR. JAMES F. McCaw, of Watertown, N. Y., had noticed that in most of his cases there was a lack of room unless the incision was carried well out. This was especially noticeable when the deviation came close to the floor anteriorly. Such an incision gave room to separate the mucous membrane below the ridge.

DR. ABRAHAM thought the flap operation should not be condemned in all cases; it was sometimes indicated. In cases with slight deviation, with a small spur, the flap operation was an excellent one. He had practiced that operation since 1897 in the class of cases mentioned. In cases with high deflections of the cartilage it is impossible for the patient to breathe freely. In such cases he never resorted to such extensive operation as that recommended by Dr. Yankauer. In cases of antero-inferior deflection he had employed this procedure ever since it was first introduced by Dr Yankauer. In selected cases it was the ideal incision.

NEW YORK ACADEMY OF MEDICINE.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Regular Meeting, October 27, 1909.

DR. HARMON SMITH, CHAIRMAN.

PRESENTATION OF CASES.

Fatality Due to "Status Lymphaticus" Following Anesthesia.

By L. M. HURD, M. D.

Negro child. Male; aged two and a half years. Previous history negative. Physical examination: Heart and lungs negative; large adenoids and tonsils; no marked development of cervical or submaxillary glands. The child was taken to the operating-room and ether was administered. Tonsils and adenoids were removed, and the child was returned to the ward in good condition. Twenty-five minutes later report came from the ward that the child was not breathing. After using the usual methods of resuscitation, the patient was pronounced dead, and the coroner's office was notified.

Investigation showed that a couple of minutes before he ceased breathing he was apparently recovering from the effects of the anesthetic, and crying. He was observed to bury his face in the pillow, and when the nurse turned the child's head, respiration seemed to have ceased, and he did not breathe again.

Autopsy. Male; aged two and a half years. Well developed and well nourished. No external marks on body. Gland in left axilla markedly enlarged. Abdomen somewhat distended and tympanic; liver enlarged; spleen enlarged and granular on section. Mesenteric glands much enlarged and numerous. Throughout the small intestine the solitary follicles were enlarged and numerous. The stomach contained no blood. Kidneys normal. Heart normal. Mediastinal glands enlarged. *Very* large thymus, covering whole anterior surface of heart and great vessels. Lungs presented little of interest. The larynx, trachea, bronchi, and small divisions were opened, and no evidence of blood clot was found. The lymphoid tissues at base of tongue were much larger than normal.

The conclusion the coroner arrived at as the result of the findings was that the child presented a well-marked case of status lymphaticus.

DISCUSSION.

DR. GERHARD H. COCKS said that there were several points that suggested themselves in connection with Dr. Hurd's case. 1. It is well to remember that if a patient is the subject of status lymphaticus, death may take place not only during or immediately after narcosis, but even twenty-four hours after the operation. Dr. Joseph A. Blake has reported the case of an adult man upon whom the operation of circumcision was performed under ether narcosis, who died about twenty-four hours after the operation. 2. The great frequency of the occurrence of constitutio lymphatica is shown by the fact that in the last 2,300 autopsies performed by the Bellevue Hospital Pathological Department, this condition was present in approximately five per cent of the cases. 3. When he worked in the Bellevue Pathological Department a few years ago, the assistants there frequently made the diagnosis of status lymphaticus on the autopsy table before the autopsy was performed.

The diagnostic points were these: In young adult males they noticed in the first place that the hair on the head was very dry, brittle and thin, while the pubic and axillary hairs showed the same conditions. In addition, the pubic and axillary hairs were very scant. There were also peculiarities of configuration, i. e., rounded and plump thighs and arms, and in the male the broad perineum of the female type. This does not apply to the children. The only way the enlarged thymus gland can be determined before death in children is by means of the X-ray.

DR. CARTER recalled a case which he reported at a meeting of the Bellevue Hospital Alumni Society six years ago. The case was brought to Dr. Wright's clinic at the Manhattan, the patient being a female infant five weeks of age. The child was badly cyanosed and was suffering greatly for want of air. The intercostal, supraclavicular, and supra-sternal notches were greatly retracted on inspiration. The patient was operated upon immediately, a tracheotomy being performed, but the child died from asphyxia thirty-six hours after the operation.

We were unable to get an autopsy, so the tracheotomy incision was enlarged far enough to see that the obstruction was due to the pressure of an enlarged thymus gland on the trachea, the tracheotomy tube was not long enough to reach beyond the constriction.

According to the best authorities the thymus gland increases in size up to the second year. It then diminishes gradually and usually it has disappeared as a glandular structure by the age of puberty.

The thymus in this case was quite large, the enlargement being in an antero-posterior direction, and the obstruction was almost complete.

There are two causes of death in this condition; one being *asphyria*, due to pressure of the enlarged gland on the trachea; the other is from *syncope*, due to the downward enlargement of the gland, causing pressure on the great vessels at the base of the heart, chiefly the pulmonary artery.

DR. SIMPSON said that it would be well for any one who could to give us indications as to how this condition could be suspected when operating on tonsils, though Dr. Cocks had given some points that would be very valuable.

DR. HARRIS said that he regretted not having arrived in time to hear Dr. Hurd's report. The subject of status lymphaticus interested him exceedingly, as he had lost a case from that cause in the spring of this year. He had reported the case at some length before the American Laryngological Association in Boston, and at that time there was some question as to the full weight that should be attached to the lymphatic condition as the cause of death. The patient that he had reported was an adult, a very strong, robust foreigner, who came to the Post-Graduate Hospital for treatment. A local anesthetic was employed made of cocaine, one-quarter of one percent, and adrenalin, 10m. of 1-1000 sol. The case suggested nothing whatever of any lymphatic condition, excepting the enlarged tonsils, but there was almost immediate syncope following the infiltration, and although the operation was very quickly performed, the patient died within the next two or three minutes. The autopsy showed a not unusually large thymus, weighing eighteen grams. There was this peculiar condition: The right side of the heart was found to be tremendously dilated. The statement which Dr. Carter had made that the normal thymus gland atrophies at puberty, was out of keeping with the opinions expressed by some authorities. His investigations had showed that while this will often take place, yet that on the other hand it will remain somewhat atrophied during life; but anything over fifteen grams is abnormal. His case therefore was abnormal. The cause of the doubt as to whether the lymphatic status was sufficient to cause death, was the question of whether death could have been due to the administration of the one one-thousandth solution of adrenalin chloride. At the time he felt that the dose was within reason and right; but the more he has considered the matter the more he

has felt that the dose was a very large one to enter the circulation, and has come to believe that it was a contributing factor.

Dr. Harris was interested in what Dr. Cocks had said about the lingering of death in the lymphatic state. These cases are generally very sudden. At an article read before the Academy last year by a physician from Ann Arbor it was stated that many of the sudden deaths on the operating table that are ascribed to ether are due to the lymphatic condition and enlarged gland which had not been recognized. He had found nothing about death occurring twenty-four or forty-eight hours after operation.

Dr. HURD said that he had looked into the subject three years ago and found nothing that could be depended upon to determine the lymphatic state before death in children. He had a case that he operated under ether also, and this child, about twenty minutes after the operation, began to have cyanosis, rapid heart, etc., which lasted for two and a half hours before he died. No stimulants or anything that was tried relieved him, and he died of heart failure.

Stenosis of the Larynx. By JOHN HORN, M. D.

Dr. GLEITSMAN presented this case in Dr. Horn's absence, who was prevented by illness from appearing.

The patient, a woman twenty-six years of age, married, was born in Kischiver, Russia, and emigrated to the United States six years ago. Being well in childhood, difficulty developed when twelve years old, which persisted ever since, but was never of such severe character that attacks of suffocation intervened. Quite frequently she coughs up small, hard, crusty pieces, after which her respiration becomes easier.

Dr. Horn, who had the patient under his observation for some time, informed the speaker, that there was no specific element in her case, and that when seventeen years of age, her mother brought her to a physician in Russia on account of increasing dyspnea, who inserted bougies, probably Schroetters, into her larynx. Since that time she had only indifferent treatment.

She breathes with comparative ease when at rest, and only labors at exertion. Her voice is clear, and the vocal cords look white and move normally. No disease is visible in the larynx proper, but below the cords in the lower region of the cricoid cartilage, a stenosis of an oblong character can be seen, formed by projecting grayish folds on both sides, and also one at the anterior wall, narrowing the lumen laterally to about one, antero-posteriorly to one and one-half centimeters. In her nose both

middle turbinals show soft, polypoid tissue in a medium degree, but no other lesion.

The character of the stenosis could not be determined during the two visits the patient paid to Dr. Gleitsmann, but will be looked into carefully, as she is entering his service at the hospital now. Depending upon the nature of the stenosis, three methods of procedure can be considered. The indirect endolaryngeal method, the direct method, and laryngotomy.

DISCUSSION.

DR. EMIL MAYER regretted that he had not been able to see the case, but the clinical picture presented by Dr. Gleitsman greatly resembled a case that he himself had seen a short time ago, and a comparison might help to clear up the question of diagnosis. A young girl, sixteen years of age, had been sent to the Mt. Sinai Hospital for obstructed breathing, dyspnea, etc., with the idea that a tracheotomy would be required. Before this was done the surgeon had asked Dr. Mayer to examine the case. He found a normal larynx, with an obstruction in the trachea, and a great deal of crust formation. When this was removed there was slight bleeding, and some thickening was observed. He then examined the nose, and found a crust formation, and when these crusts were wiped away thin, pale excrescences were revealed. These were removed, and a definite diagnosis of rhinoscleroma, or tracheoscleroma was made. The specimen was sent to the pathologist, who reported "Rhino-scleroma."

It seems probable that this is the condition in Dr. Gleitsmann's case also, for she comes from the scleroma region. He understood that she also had nasal polypi, a catarrhal condition, and these granulations may be seen. One must be on the qui vive for this condition, for it is ordinarily passed over, but a removal of this material and a pathological examination would clear up the condition. If that be the case, and the patient comes to an operative procedure, there is one thing to do—open up the trachea and expose it to the X-ray, and the patient will have a chance of getting well. A case which he had presented three years ago, and which submitted to that form of treatment, has had no recurrence.

DR. MYLES said that he had examined the patient rather imperfectly, but it seemed to him that she was suffering from some form of extensive incrustation on the walls of the trachea, beneath which was a certain condition of erosion, due to confinement of the decaying pus and mucus, which had caused the thickening

He saw evidence of muco-pus issuing from the nose, with characteristics which he had found frequently in certain Russian subjects; it seemed to him probable that if the nose was properly treated and the sinuses opened if necessary and the discharge stopped from entering the trachea, at night especially, then afterwards an attempt to better the condition by intra-tracheal injections, the more extensive operations could be considered.

DR. EMIL MAYER said that he had not completed the history of the case. The girl was not operated upon, but was placed under his observation. She is frequently examined by the direct method and tubes introduced. A quantity of dry crusts have been cleared away, and small pieces of granulation tissue, and he was putting off operation until it should become necessary.

DR. GLEITSMANN said that he fully agreed with Dr. Myles that the first step should be the removal of the nasal obstruction. He was not sure if there was actual sinus disease, but the removal of the polypi would determine that. He would send the woman to the hospital, and intended first to clean out the nose and then examine the sinuses and remove the polypi; then he would follow out the suggestion of Dr. Mayer and have a pathological examination made of specimens from the larynx, on which the manner of the surgical interference would largely depend.

Leprosy with Throat Lesions. By H. Fox, M. D.

DR. FOX said that this was a much more extensive case of leprosy than the one he showed before the Section last year.

The patient is one of twenty-two lepers in New York, of whom Dr. Fox has had personal knowledge within the last four or five months. In twelve out of fifteen of these cases the Wassermann test has been applied and has given a positive reaction. It would doubtless surprise many to know that there are so many of these cases in this city.

The patient is an Italian, twenty-seven years old. His family history is negative. As a child he suffered from small-pox. There is no history or other indication of syphilis. The patient came to the United States five years ago. Symptoms of leprosy were first noticed three years ago, including soreness of the nose, and the characteristic lesions of the face. The patient now presents a picture of nodular leprosy in an advanced stage. The entire face, especially the forehead, nose, chin and ears, presents closely crowded nodules, giving the patient the typical leonine appearance of leprosy. A large group of nodules is situated over the larynx and another

over the knuckles of the right hand. Scattered among the many nodules of the face are seen typical pitted scars of variola. There are a few anesthetic macules upon the trunk. The ulnar nerves are enlarged and tender. Examination of the ulcerated throat lesions for leprosy bacilli shows the bacilli present in very great numbers and aggregated into compact masses.

A description of the throat lesions by Dr. S. J. Kopetzky, who kindly examined the case for me, is as follows:

Hard palate: Infiltrated, ulcerated and indurated. Large ulcer to left of medium line, one-half inch beyond tooth line. Surface covered with detritus and epithelium.

Soft palate: Mostly indurated, showing a fissure between itself and the uvula on the left side. Uvula edematous.

Posterior Pharyngeal Wall: The line of the posterior pillars markedly indurated and show surface ulcerations. At places on this wall there appears what may be atrophic spots, but these may be the natural niveau of the tissue, only showing as depressions because of the induration of the surrounding parts. Post-rhinoscopic space, was not well seen.

Larynx: Rima glottis thickened; ulcerated.

Arytenoids: Swollen and infiltrated.

Intraventricular folds swollen and covering the cords, so that no acute view of the cords was obtainable.

Tongue: Thickened, fissured. No marked swelling of the lingual tonsil.

Tonsils: Shows surface ulcerations, but are not enlarged.

DR. MAYER said that he hoped that instead of giving this brief report of the case, Dr. Fox would prepare a more extended one giving in detail its origin, etc., as a matter of record. These cases are very interesting and in our transactions which appear in THE LARYNGOSCOPE, we should have a complete record of such rare conditions.

DR. HARRIS inquired whether Dr. Fox had made a routine examination of the seventeen cases referred to. If so, he would like to know if he found involvement of the throat in all, or in how many.

DR. FOX replied that he had not had a laryngeal examination made in any of the cases. He had looked for mouth lesion in many of the cases, but had not observed them in any except the present case.

Replying to Dr. Mayer, he said that he intended to prepare a full report of the case, but thought it would be tiresome to give the full details to the meeting to-night.

BOOK REVIEWS.

American Practice of Surgery—A Complete System of the Science and Art of Surgery.

Surgeons of the United States and Canada. Editors, JOSEPH D. BRYANT and ALBERT H. BUCK, New York.

In Volume VI of the American Practice of Surgery we desire to make special mention of the chapter on surgical diseases and wounds of the nasal cavities and accessory sinuses, contributed by Dr. Harris Peyton Mosher. The splendid research and anatomical work in which this author has been engaged for a number of years past, specially qualifies him to present such a monograph thoroughly and scientifically. Much of the anatomical data which he has collected, is offered in this monograph and forms a substantial basis for his consideration of the applied anatomy and surgery of the accessory sinuses. The surgical treatment of these areas is exhaustively presented and carefully and beautifully illustrated. Radiography and transillumination of the accessory sinuses is also given space. The illustrations descriptive of the technique of the frontal sinus operation is, perhaps, as clean-cut and well presented as any that we have as yet seen.

Another chapter in this American Practice of Surgery is that on Pyogenic Diseases of the Brain of Otitic Origin, by Dr. H. O. Reik. The various complications of suppurative processes in the ear of extra-dural and cerebral character are here considered and the operative procedures for their relief are given a concise, but perhaps, too brief consideration. The illustrations accompanying the text are well executed, but few in number.

A Treatise on the Diseases of the Nose, Throat and Ear.

By WILLIAM LINCOLN BALLENGER, M. D., Professor of Laryngology, Rhinology and Otolaryngology in the College of Physicians and Surgeons, Chicago. New (2d) edition, thoroughly revised. Octavo, 930 pages, with 491 engravings, mostly original, and 17 colored plates. Cloth, \$5.50, net. Lea & Febiger, Philadelphia and New York, 1909.

The exhaustion of the first edition of this large treatise within a year of its publication, is the most conclusive evidence of our predictions in its review in THE LARYNGOSCOPE. Ballenger's work is an epoch-maker among the larger American treatises in otology and laryngology and it is a satisfaction to know that the prompt appearance of the second edition enables the author to keep this volume abreast of its subject matter, especially when we consider the rapid progress that is being made in this field of science.

Among the most definite changes noted in the second edition may be mentioned the functional tests of the labyrinth and their clinical application as developed in the past few years by Neumann, Bárány, and others, and liberal space has been allotted to this new work. The chapter on the surgery of the nasal accessory sinuses has been elaborated, several new operations described, and numerous illustrations added. The surgery of the tonsil in its recent evolution is also given careful consideration. The chapter on submucous resection of the nasal septum has been enlarged and the description of recent modifications of this operation is given space.

The illustrations which constitute one of the special features of this work have been largely increased and we note in some instances that the pen drawings of the first edition have been replaced by more distinct and effective wash and brush work.

We congratulate author, artist, and publisher alike on the completeness with which this representative American treatise on otology and laryngology is presented.

1909

Index-Medicus of Oto-Laryngology.

H. H.

Note:—All titles marked with a * are abstracted under their respective numbers in the second section. All articles marked with * * have appeared as original papers in THE LARYNGOSCOPE and are referred to as such. Authors are requested to notify us of errors or omissions.

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ABSTRACTS OF OTO-LARYNGOLOGY.

2

Septal Deviations. N. M. BLACK, *Jour. A. M. A.*, March 20, 1909.

Dr. Black is convinced that not only are dental and jaw irregularities a decided factor in the production of deflected septa, but that complete relief without possibility of return of the condition, when found in conjunction with dental deformities, can be secured only by first correcting the deformity in the superior maxilla. He reviews at some length the literature of the opinions as regards the etiology or septal deviation and its connection with oral and dental irregularities, and says that it is unaccountable to him that while rhinologists practically acknowledge the important part played by irregularities in the upper maxilla in the production of septal deformities, they do not apply that knowledge in the treatment of the conditions. He finds nowhere in the directions for treatment any suggestion for the correction of these deformities. It is far better, in his opinion, to seek first to increase the size of the nasal fossa before depending solely on the removal of superfluous tissue, however beneficial that may be as a later measure. This widening, so far as his knowledge extends, can only be accomplished by widening the arch of the superior maxilla. This procedure, to be effective in enlarging the base of the nares, must be essentially different from the ordinary expansion for the regulation of the teeth in abnormal position. Such expansion relieves the pressure on the septum, which tends to straighten itself, enlarging the breathing space, and reduces the static congestion, which further adds to the nasal capacity. The turbinates become reduced in size and adenoids rarely fail to become smaller after nasal breathing is established. Black credits the successful results so far in this line solely to Dr. G. V. I. Brown and, while he differs from him somewhat in their explanation, concedes that his theory is probably correct; viz., that it is entirely due to the separation of the median palatal suture. Black thinks that there is also a lowering of the vault, the result of an outward tilting of the alveoli, which pulls the septum down. As to the age when this should be done there is some dispute. Kyle holds that little can be done successfully in the way of widening the nasal space after the seventh year, and deformations of the septum may appear before that age. Gray, on the other hand, says that the intra-palatine sutures are not obliterated until middle life, and, this being the case, widening operations ought to be possible till then. The great reason why septic deformities tend to return is, in the first place, the difficulty of removing sufficient tissue to prevent backward pressure on the septum, and, in the second place, the main etiologic factor—some dental or jaw irregularity—is overlooked and goes uncorrected. —*Ex.*

3

Case of Septal Abscess. J. PRICE-BROWN, *Can. Jour. of Med. and Surg.*, Oct., 1909.

The case was not seen till the twenty-fifth day after the causative blow on the nose, and then only on account of the obstructive stenosis. Discharges of pus and blood were very free from the incision, but the boy showed no signs of blood poisoning.

WISHART.

11

Septicemia Following Submucous Resection of the Nasal Septum; One Death; One Recovery. H. HAYS, *THE LARYNGOSCOPE*, Dec., 1909, and *Ann. Jour. of Surg.*, Nov., 1909.

Original contribution to *THE LARYNGOSCOPE*, p. 914, Dec., 1910.

17

The Indications for the Exposure of the Nasal Septum Through the Mouth. LÖWE, *Monatsschr. f. Ohrenh.*, Bd. 2, p. 105, 1909.

Dr. Löwe concludes from the results of his operations that in the following five cases the oral procedure in the exposing of the endonasal septum is to be preferred.

1. In nurslings and in children in their first year.
2. In the so-called transverse fractures of the septum, as soon as a more pronounced displacement of the anterior fragment has taken place.
3. In certain cases in which it is a matter of correcting misformations of the olfactory organ, due to a faulty septum; namely, crooked noses, too large, too small, or too much curved.
4. When space-impeding processes within the lower nasal passage have taken place.
5. Rhinologists who have only occasional opportunity to operate on the septum, and who have not consequently sufficient experience in this difficult field, do well to use the oral method in septum anomalies, as it requires less operative skill, and therefore answers even to the unexperienced perfect results.

The article is preceded by the opposing view which Brünings (Freiburg) brings forth against his method, for which Dr. Löwe besides claims priority. He adds remarks on the technic of oral septum method which has been re-examined and modified by Winkler and Kretschmann. The author presumes that still further indications for this method will appear when used more by rhinologists.—Ed.

21

Expedition Method for Submucous Resection of Triangular Cartilage of Nose. W. P. PORCHER, *Jour. South Carolina Med. Ass'n*, Dec., 1909.

In Porcher's case, the triangular cartilage was found to be dislocated on the right side, causing considerable flattening of the end of the nose and almost complete occlusion of that nostril. After dissecting up the mucous membrane over the dislocated portion of the cartilage, Porcher decided to use the electric trephine instead of the knife or forceps, because the cartilage proved to be very tough and situated somewhat further

back in the nose than usual. With a rather long Curtis trephine two large cones of cartilage were drilled away, the trephine passing through the mucous membrane in the rear. The projecting ends of the cartilage having been removed, the septum resumed its erect position. The mucous membrane was allowed to fall back into position and a compress of cotton was used to hold it so until union took place, which was by first intention.

Porcher asserts that an excellent feature of this operation is that perforation rarely occurs. Unless the angle of deflection of the septum is extremely acute, it is almost impossible to produce a perforation. In a straight septum, the trephine would have to be held at right angles to the partition to penetrate through it, and therefore this accident would only be likely to happen in proportion to the acuteness of the angle or the amount of deflection present. —*Ex.*

22

Surgical Correction of Deformities of the Nasal Septum. EDWIN PYNCHON, *Jour. of Ophthal. and Oto-Laryngol.*, Oct.-Nov., 1909.

An extensive paper going into considerable detail as to physiologic, etiologic and therapeutic conditions. Preliminary to operation, the author advises the patient to use his D-P solution bath in the nose and throat every hour for a few days. Daily office treatments are carried out by the use of the cotton applicator. Before applying the cocaine for anesthesia, the adult patient is given a tablet of one-thirtieth grain strychnine. One per cent solution cocain is first sprayed into each nostril, then two cotton applicators containing a ten per cent solution cocain. After ten minutes the septum is massaged with a twenty per cent solution cocain, and, lastly, with the following powder: Powd. muriate cocain, 90; powd. antipyrin, 10, making the use of adrenalin unnecessary.

All solutions of cocain contain one-half as much phenol as there is of the cocain. In cocain intoxication volasem is employed. The usual head mirror and reflected light from a round 32-c. stereopticon lamp are used for illumination. The curved incision of Killian is employed. The elevation of the perichondrium is started with the little finger in the opposite nostril. Generally the separation is started above and extended backward and then downward, and finally forward again with special curved and blunt instruments. The cartilage is incised at an angle and with the little finger in the opposite nostril. In some cases the incision through the cartilage is a continuation of the primary mucosa incision, and thus the perichondrium of the opposite nostril is elevated first. Ballenger's swivel knife is used to remove the cartilage, because it gives a clean incision with a smooth and even edge. In removing deep posterior bony defects a second vertical incision may be employed after removal of the anterior cartilage. It may be made on the same or opposite sides as the anterior incision. The wound is irrigated and sutures applied, if necessary. The nostrils are tamponed with strips of lint three-eighths of an inch by nine inches, partly removed in 24 hours. The author concludes that one hour in an average case and two or three hours in a bad case is time well spent in operating after this method.

STEIN.

28

- The Incision for the Submucous Resection.** S. YANKAUER, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 196, Feb., 1910.

32

- Conservation of the Middle Turbinate.** W. A. HITSCHLER, *Am. Jour. of Surg.*, Dec., 1909.

According to Hitschler, the point to be observed is that a normal middle turbinate cannot be sacrificed without interfering with the functioning power of the nose, and the function of the nose is to cleanse, warm and moisten the air in its passage to the lung. The nasal mucous membrane is not of the same anatomic structure throughout. In passing over a heated surface the air is warmed directly in proportion to the amount of heated surface over which it must pass. Nature has therefore placed in certain portions of the nasal mucous membrane a tissue which can alter the area of its surface to accommodate itself to the varying conditions of the inspired air. The tissue which can thus contract and expand is the cavernous tissue, and this cavernous tissue reaches its highest development in the median surface of the inferior turbinate and in the inferior surface of the middle turbinate—portions of the nasal fossa in the direct line of the current of inspired air. This cavernous tissue also reaches a high grade of development in the inferior portion of the inferior turbinate, and to a less extent on the anterosuperior portion of the septum—the tubercle. It is thus evident that the inferior portion of the middle turbinate is a highly functioning organ and its removal must be accompanied by loss of its function.—*Ex.*

33

- Benignant Tumors of the Turbinates.** R. H. JOHNSTON, *Jour. A. M. A.*, July 24, 1909.

Premising his article with the statement that benign tumors of the turbinate bodies, aside from nasal polypi, are very rare, Dr. Johnston, Baltimore, reports six cases of growths, adenomatous, fibrous, etc., of these parts, and discusses the subject generally. Papillomatous growths of the nasal structure are usually small and produce few or no symptoms, but they may simulate in their stubbornness similar growths in the larynx, as is shown by three cases reported by Wright. Blood tumors of the turbinate bodies may become dangerous on account of hemorrhage and he refers to several instances reported in the literature. As regards the etiology of nasal growths our knowledge is incomplete. Chronic inflammations and trauma occur in this part all out of proportion to the occurrence of true tumor, and Johnston is inclined to consider plausible Williams' theory, advanced a few years ago, that they are caused by reserve cells stored in the body and controlled by a definite course which is always active when the patient is in good physical condition. When the organ suffers, however, from malnutrition, or when from any cause the cells are no longer under control, they produce neoplasms. The symptoms of nasal growths often simulate malignancy and it is frequently impossible to make a diag-

nosis between benign and malignant tumors from symptoms alone; hence the value of the microscope in these diagnoses. In conclusion, Johnston mentions the possibility of the transformation of benignant tumors to malignant ones and mentions the difference of opinions and lack of satisfactory data. While we may admit that such transformation may occur, we can still apply to it the Scotch verdict of "not proven." —*Ex.*

34

Mucocele of the Middle Turbinate. A. ONODI, *Orvosi Hetilap*, No. 22, 1903.

Onodi opened an osseous blister of the left side, which proved to be a mucocele. —*Ed.*

40

Adenoids in Infancy. R. G. FREEMAN, *Jour. A. M. A.*, Aug. 21, 1909.

Dr. Freeman criticizes the neglect of adenoids in early infancy, as they interfere with the proper development of the child by reflex action, by the irritation they produce and the obstruction they cause. The post-nasal pharynx at birth is a space only one-quarter inch high by one-third inch wide, so that a very slight adenoid hypertrophy at this period will cause obstruction. At the end of the first year it is nearly doubled in size. It often produces symptoms in the first days of life and the mistake is sometimes made of diagnosing specific disease. The snuffles are specially marked while the child is nursing and result from an adenoid which produces irritation, and if large enough to obstruct the pharynx, there is mouth breathing. Other causes may produce mouth breathing, but adenoids do so most frequently during the first year of life. A third indication of the condition is the appearance of recurrent colds which, during the first year, are usually caused by adenoids. Another most characteristic sign is a persistent cough, sometimes simulating whooping cough, without any other indication in the pharynx or bronchi to account for it. A fifth and most dangerous condition is otitis media. It is not always easy in a very young infant to determine the presence of adenoids, but it can be done by rapid manipulation. The right index finger being rapidly passed into the mouth while the jaw is held open by the ends of the fingers of the left hand pressing on the teeth, the rough surface of the adenoid can be detected by the skilled physician, and sometimes so quickly that the baby does not even cry. He describes the operation of removal of the adenoids, which he says can be done quickly without an anesthetic and with very little shock or lasting fright. If an anesthetic is used it should be nitrous oxid, and only enough to produce primary anesthesia, and the parents should be warned of the possibility of a lymphatic constitution and the dangers of anesthesia in that case. In conclusion, he says that adenoid hypertrophy which causes persistent symptoms should be operated on as early as the third or fourth month of life. The operation should be done rapidly and without an anesthetic. —*Ex.*

49

Adenoids in Adults. O. ORENDORFF, *Jour. A. M. A.*, Sept. 25, 1909.

Dr. Orendorff says that we are liable to fail to recognize adenoids when they occur in a well-developed healthy adult, of age anywhere up

to 50. The following is the usual history: There was catarrh in childhood with symptoms of nasal obstruction, perhaps following an attack of scarlet fever with prolonged recovery. During adolescence the symptoms gradually lessened, but left symptoms of chronic catarrh, of which the patient still complains, inspection shows the usual highly arched palate with the "adenoid fringe" of its remnants, and the fauces of pharynx covered with a slimy, sticky mucous. The lingual papillae are enlarged and there are nodules on the posterior walls—"granular pharyngitis." In his experience, Orendorff says he has never failed to find this nodular condition high up on the posterior wall, in patients over 15 years of age. The tonsils are usually sclerotic and the examining finger or mirror shows the disease to be more fibrous than in children with less of the fishworm character, but invariably more voluminous than would at first appear. These patients are generally treated for catarrh and what may be called "office suggestion" until they get tired of it. In average practice there should be four or five well-defined cases met with in a year. He reports and illustrates a typical case which had been overlooked by several good general physicians and by at least one specialist of reputation. When recognized, it was not relieved by the first operation, and for no other reason than that it seemed too simple to call for a careful technic. The next day the voice was still muffled and the mass in the nasal pharynx was apparently as large as before. Evidently the tumor was bifurcated and the anterior portion was pushed forward into the posterior nares at the first operation. A second operation was successful. Adenoids in adults are not common, as they usually disappear before maturity, but, when they do not disappear, their character changes from those of childhood. The patients are really sufferers and there is no good in sprays or local applications or internal treatment. Results of complete operation are satisfactory and permanent. —Ed.

59

Polyphobia with Other Nervous Disorders in a Rhinopathic Patient.

G. D'AINTOLO, *Boll. delle Mal. dell' Orecchio, Naso e Gola*, No. 1, 1909.

Abstracted in *THE LARYNGSCOPIC*, p. 58c, Aug., 1909.

65

Beziehungen der Nase zu anderen Organen des Körpers. (Nerve Connections Between the Nose and Other Organs of the Body.) B. GOLDSCHMIDT, *Therapie der Gegenwart*, Aug., 1909.

Goldschmidt calls attention anew to the close connection between the nose and certain other organs, and relates a number of striking instances of complete cure—by cauterization of certain points in the nose—of pain in the stomach, genitalia, in regions innervated by the lower spinal nerves and in the head and face. His experiences confirm the assertions of Fließ in regard to the close relation between the nose and sexual organs, but he thinks that other organs are involved with equal frequency. He has not been able to find any special point in the nose connected with the various organs, but, as a rule, when relief follows application of cocaine to any part of the nose, a permanent cure is ob-

tained by cauterizing the spot with trichloroacetic acid. He cites a number of instructive examples of each type. Nearly all the patients had applied merely for some nasal affection, and the discovery of the other trouble was a casual incident. In one case a woman of thirty, being treated for a slight throat trouble, casually mentioned that she had had repeated gall-stone colics for seven years but had never passed any gall-stones and no treatment had been able to ward off the attacks which utterly prostrated her. He applied a cocaine tampon to the outer end of the left middle turbinate during an attack and the pain was reduced in a few minutes. He cauterized the spot later and the patient was free from pain for a long time; then the colic recurred, on which he resected the part of the turbinate involved and also cocaineized the outer end of both inferior turbinates and there has been no recurrence of the colic since. In another case a medical student, twenty-eight years old, had suffered for ten years from vomiting, nausea and intense pain in the stomach after every meal, and had been under the treatment of many internists, in turn, without the slightest relief. After cocaineization of the outer end of the middle turbinate the sensation of oppression in the stomach vanished. These points were then cauterized and the patient was told to eat anything he chose; notwithstanding a hearty diet there was no recurrence of pain or nausea until after the scab had dropped off, when the bone was resected and the outer end of the left inferior cauterized, since which there has been no further disturbance, the patient having been entirely cured for nearly two years. In another similar case the patient was not told that the little operation on the nose had anything to do with the stomach trouble, so that suggestion had nothing to do with the prompt and permanent cure. Cocainization of the nasal mucosa also proved effectual in curing subjective auditory and visual symptoms, and neuralgia in the face. —*Ex.*

84

The Nature and Causes of Nasal Mucous Polypi. E. F. GARRAGHAN, *Ill. Med. Jour.*, Dec., 1909.

That nasal polypi are not necessarily dependent on suppuration in the accessory cavities of the nose, although they are sometimes found associated with such suppuration, is Garraghan's belief. Suppuration in the nasal sinuses may result from the presence of a mucous polyp in the nose. Nasal polypi should be considered as a symptom of a disease which in most cases demands more than the simple removal of the polypi to effect a permanent cure. In the majority of instances, after the removal of the polyp, which is best performed by means of the cold wire snare and punch forceps, the thorough removal of all diseased or carious bone which may be found on any of the nasal sinuses is absolutely essential to the prevention of the recurrence of nasal polypi. —*Ex.*

94

Nasal Myxosarcoma in a Child of Three Years. G. T. ROSS, *Ann. of Otol., Rhinol. and Laryngol.*, Sept., 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 188, Feb., 1910.

117

Malignant Disease of the Nose. D. J. G. WISHART, *Can. Lancet*, Aug., 1909.

The writer recites the history of seven cases, out of which six have fallen under his observation. Of these, five were sarcomatous, and one carcinomatous. The growth sprang from the ethmoid in five. Radical operations were performed in five; one treated by Colley's fluid, and one by galvano-cautery. In two cases only was life prolonged.

118

Nasopharyngeal Fibroma. U. ZANDONINI, *Riformi Med.*, May 24, 1909.

Zandonini has found signs of an inflammatory process in the upper air passages so constantly with fibromas that he is inclined to ascribe etiologic importance to it. The fibroma may retrogress, and consequently palliative measures are justifiable if the patient is at an age when such involution is liable to occur. But in the young the growth should be radically removed and he describes four cases in which he did this with success.—*Ex.*

125

Nasal Obstruction; Experimental Study of its Effects Upon the Respiratory Organs and the General System. W. S. ANDERSON, *Ann. of Otol., Rhinol. and Laryngol.*, Sept., 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 167, Feb., 1910.

133

The Common Cold. R. C. BROWN, *Med. Record*, Feb. 6, 1909.

Brown discusses the character of a common cold, more particularly with regard to the prevailing view that it is an infection, either specific or due to lowered resistance of the body laying it open to attack by innumerable micro-organisms, and reviews both these theories critically. He says that before the human race had been accustomed to clothes and overheated houses colds were probably infrequent. Exposure to cold and catching cold are not synonymous. When the body is put to an effort to conserve its heat, as in exposure to cold, there is not much danger of catching cold, but when the body is put to an effort to lose its heat, or is, in other words, overheated, there is great danger. The greatest likelihood of colds comes when the body is at one time overprotected and at another underprotected. When a skin area which is usually overprotected, is exposed to a draft, an over-impulse is conveyed to the vasomotor center, an exaggerated response is sent out, and the peripheral blood vessels are contracted over a large area. If, under these conditions, the temperature is taken, it will be found to have risen slightly. The body which was attempting to lose heat, finds itself further embarrassed as the radiation from a considerable portion of the skin has been shut off. The turbinates being a means by which heat is lost, it is not strange that, under the circumstances, vasomotor impulses should be sent to them, and that the tortuous blood vessels of these bodies should be dilated to the point of overcongestion. On this theory, both the so-called habit of taking cold and treatment for prevention of colds

can be explained. The more often the nerve impulses are sent through certain channels, the easier does the impulse follow that channel, so that in a sensitive person the slightest exposure will result in a cold in the head. On the other hand, through the intelligent use of clothing, right living, and the proper use of baths, the skin may be kept in such a condition that it will send only normal impulses. The author therefore prefers the view of the vasomotor origin of cold —*Ex.*

135

The Common Cold. H. CAMPBELL, *The Practitioner*, Oct., 1909.

Campbell claims that by means of vaccine therapy, not only are we able to cut short an acute cold, but also to confer considerable immunity against future attacks. In but few cases of common cold can a stock of vaccine be employed with much hope of success; except in the case of the *Bacillus septus* we are not likely to do good by any vaccine other than that prepared from the patient's own person. —*Ex.*

140

Recurring Coryza a Manifestation of Autointoxication. P. CORNET, *Press Med.*, Jan. 16, 1909.

Cornet presents numerous arguments to sustain his view that recurring coryza, from simple "colds in the head" to pronounced hay fever, is merely one of the manifestations of the arthritic diathesis, that is, of a family tendency to sluggish elimination of waste products and toxins. He points out that the mucosa of the nose is an excreting organ, and the excretion through this mucosa of some of the toxins generated in the digestive tract may be one factor in recurring coryza. He has had a number of instances in his experience in which an error in diet was promptly followed by an attack of coryza. It is like the congestion observed in the face during difficult digestion. Reflex irritation from the digestive tract distends the vessels, heats and reddens the face, and by stimulating the glands renders the skin greasy and pimply. This same process in the nasal mucosa induces swelling, congestion and excessive secretion; the nerve fibers in the mucosa become irritated from the recurring or continuous autointoxication and the consequent hyperesthesia renders them peculiarly sensitive to dust inhaled or changes in temperature. He has found regulation of the diet, especially avoidance of meat and alcohol, the most effectual means of curing such patients. A little white meat at noonday is all he allows. If local measures are deemed necessary, he applies the actual cautery to the hypersensitive points. The cauterization must be deep enough to destroy the nerve filaments, but this alone is futile unless the underlying auto-intoxication is combated. The hypersensitive points in the nose are mainly the protruding points where lodge the inspired dust and microbes. —*Ex.*

148

Eye Diseases Associated with Nasal and Nasopharyngeal Disorders.

T. FAITH, *Ill. Med. Jour.*, Dec., 1909.

Faith claims that nasal and nasopharyngeal disease may be responsible for headaches of an ocular type, supraorbital neuralgia, localized pains in the eyes, asthenopic symptoms, vascular disturbances, congestion of

conjunctiva, edema of lids, exophthalmos, orbital cellulitis and abscess, optic neuritis, usually retrobulbar, ocular palsies, and phorias, keratitis, phlyctenulæ of either the conjunctiva or cornea, and diseases of the lachrymal apparatus. —*Ex.*

150

Eruptive Manifestations in the Nose and Throat of Children from a Pediatric Standpoint. L. FISCHER.

Original contribution to *THE LARYNGOSCOPE*, p. 217, March, 1909.

157

Ozena, No Terra Incognita. J. HOLINGER.

Original contribution to *THE LARYNGOSCOPE*, p. 45, Jan., 1909.

160

The Nose and Nasopharynx in Infants and Children. J. M. INGERSOLL.

Original contribution to *THE LARYNGOSCOPE*, p. 894, 1909.

163

Report of a Case of Rhinoscleroma. E. L. KENYON.

Original contribution to *THE LARYNGOSCOPE*, p. 225, March, 1909.

164

Nasal Crisis in Tabes. M. KLIPPEL and J. LHERMITTE, *Semaine Med.*, Feb., 1909.

Klippel and Lhermitte call attention to the differential and prognostic value of the occasional phenomena in the sphere of the sense of smell and of nasal sensation and secretion which are an instructive symptom of incipient tabes or may accompany the advanced phases indicating involvement of the brain in the tabetic process. They describe a number of typical examples of the various forms of these tabetic nasal crises: The subject may suddenly experience a tickling in the nose followed by the sensation of the smell of fish or rotten eggs, or the spasm may occur without any preliminary sensations, merely the strong odor of rotten eggs, sometimes compelling him to leave the table if eating at the time. In other cases there are the sensations of a peculiar odor and taste in the mouth with excessive flow of saliva or nasal discharge. These nasal crises do not seem to be rare in tabes; but their diagnostic importance hitherto has been generally overlooked. They may occur and be pronounced before there is any sign of ataxia. In some cases the crisis may be accompanied by sneezing or a spasmodic cough suggesting whooping cough, with lachrimation and rhinorrhea, or periods of excessive nasal discharge may be the only element of the nasal crisis. Pathologic anatomy confirms the findings in the clinic by showing the lesions in the apparatus that governs the sense of smell and the secreting function and vasodilatation in the nasal mucosa. The disturbances indicate a process affecting and destroying the olfactory tract and the trigeminal nerve and threatening others in the vicinity, suggesting the possibility of impending mental decay. —*Ex.*

165

A Case of Naso-Prothesis. M. M. KRINGS, *Tijdschr. v. Tandheelk.*, Bd. XVI., Heft 3.

The external nose was destroyed through lupus. The bone of the nose was preserved, the cartilaginous septum has disappeared. After making impressions in stents and in gypsum, Dr. Krings made a stents model of the new nose and built the nose on it out of red wax. It was fastened above to spectacles, below to two golden clamps fastened to the nasal cavities. The latter do not touch the nasal wall in repose, but do when there is twitching of the muscles in laughing or speaking. Under such conditions the nose prevents their gliding off. The nose was then vulcanized with hard caoutchouc. This material is preferable to platinum, which gets too cold, to celluloid, which is dangerous for smokers; to soft caoutchouc, which is too difficult to manipulate, and also to paperware, which is sensitive to dampness. The color was put on with regular portrait coloring. Thinned with turpentine, this sticks very well to caoutchouc. The results were in every case ideal.—Ed.

168

Taking Cold. D. BRADEN KYLE, *Ann. of Otol., Rhinol. and Laryngol.*, Sept., 1909.

After reviewing the systemic conditions which bring about irritation of the mucous membrane which resembles taking cold, the author believes that in a large percentage of cases of so-called cold in the head, no one remedy can be applied, and that the individual must be studied as carefully for the predisposing cause or underlying element as though typhoid fever or a beginning pneumonia were suspected. In other words, every individual case should be studied from an individual standpoint. The individual study of cases enables the physician to scientifically apply his remedial agent, and not empirically prescribe a cold remedy. His own experience has been that out of one hundred persons presenting themselves for relief of what they call a cold in the head, or having taken cold, or frequently taking cold, at least eighty percent belong to the class of systematic conditions, either constitutional, organic or chemic.

SCHPEPPEGRELL.

170

Atrophic Rhinitis. S. H. LARGE.

Original contribution to THE LARYNGOSCOPE, p. 230, March, 1909.

174

The Toxic Action of Adrenalin Applied to the Mucous Membrane of the Nose. M. LERMOYEZ and C. AUBERTIN, *Ann. des mal de l'oreille*, Vol. 35, No. 9, 1909.

By experiment, Drs. Lermoyez and Aubertin prove that adrenalin injected into rabbits for several months causes them to succumb to pulmonary phthisis. Dissection always revealed hypertrophy of the muscles of the heart. Great care must therefore be taken in its use in rhinology. Careful application of 1/5000 adrenalin to the mucous

membrane of the nose is permissible. A stronger solution is seldom necessary. Rather than use a solution stronger than 1 mg. for subcutaneous injections ten to twelve drops of the known solution (1/1000) should be used. The following mixture of adrenalin and cocaine is recommended:

Coc. mur. 0.25.

Adrenal. sol. 1 0/00 5.00.

Aq. dist. 20.00.

After cauterization this solution is of great avail in that it reduces the reactionary swelling. On the other hand, patients must be urgently warned not to use adrenalin for any length of time. (Patients with serous catarrh and nasal asthma are prone to attempt a prolonged use.) The above named experiments show that this results in lasting injury to the heart, with danger of acute pulmonary phthisis. —ED.

177

Dangers of Tamponade of the Nasopharyngeal Space. E. MAYER, *Münch.*

Med. Wchnschr., Oct. 26, 1909.

Mayer reports a case in which the nasopharyngeal space of a boy, sixteen years old, was tamponed to control a violent nosebleed and the tamponade resulted in bilateral acute purulent otitis media with involvement of the mastoid, bilateral purulent inflammation of the antrum of Highmore, extension of the inflammation on the right side to the orbit, and the formation of an orbital phlegmon. These complications were ascribed to two causes, the long continuance of the tampon in place and the presence of a purulent catarrh in the nasopharyngeal space of the patient. The tampon should be left in situ until the bleeding vessel is occluded by a thrombus, which is not certain till after the third day, and many authors state that no harm results if the tampon is left five days. But if a purulent process is present symptoms may be produced which call for the removal of the tampon after a much shorter time. —EX.

179

Primary Tuberculosis of the Nasopharynx. H. MERKEL, *Münch. Med.*

Wchnschr., June 8, 1909.

Merkel has found only four cases on record of primary tuberculosis of the nasopharynx confirmed by autopsy, and here reports a fifth case. Without the autopsy findings it would have been recorded as an unquestionable case of pulmonary tuberculosis with secondary tuberculous meningitis. Tubercle bacilli were found constantly in the sputum, but the focus in the nasopharynx was the only manifestation of tuberculosis discovered in the cadaver, and this gave no sign of its presence except the bacilli which were ascribed to the lungs. —EX.

183

Nasal Obstruction and Deafness. MOURE AND BRINDEL, *Rev. hebdom.*

Laryngol., d' Otol. et de Rhinol., June 12, 1909.

The influence of severe nasal obstruction in causing deafness is well recognized. The authors point out the baneful results in hearing due to

a less marked narrowing of the nasal passages, and their conclusions are reached both from anatomical studies and clinical experience, as follows: By studying first the chief source of blood supply to the posterior part of the nose and tympanic cavity. 2. The relation of the posterior end of the inferior turbinal to the Eustachian orifice. 3. The varied size and shape of the Eustachian opening. The chief changes take place in the posterior end of the lower turbinate, and as regards the ear, there is nothing characteristic about the condition of the membrane. The deafer ear may or may not be on the same side of the nasal insufficiency. As a result of recurrent attacks of congestion slow changes are brought about in the tympanic mucosa, which ultimately lead to a permanent deterioration of hearing.

Appropriate treatment of the nasal obstruction is followed by satisfactory results in hearing, especially in Rinné negative and Weber, lateralized to the most affected ear. The tinnitus, too, in many cases is benefited.

The conclusions are that in all cases of deafness and tinnitus the nose should be examined and if there is a nasal insufficiency the establishment of free nasal respiration, will in a majority of cases lead to partial or complete disappearance of the deafness and tinnitus. —Ed.

191

Staphylococcus Rhinitis as a Cause of Folliculitis Exulcerans Serpiginosa Nasi. T. J. REARDON.

Original contribution to THE LARYNGOSCOPE, p. 920, Dec., 1909.

192

The Present Status of Surgical Treatment of Chronic Suppurative Disease of the Nasal and Aural Cellular Spaces. A Comparison. J. N. REIK.

Original contribution to THE LARYNGOSCOPE, p. 823, Nov., 1909.

204

The Importance of Rhinological Examination in all Cases of Meningitis of Doubtful Origin. ROSS HALL SKILLERN, *Pa. Med. Jour.*, Aug., 1909.

The author discusses the prevalence of meningeal complications in rhinological diseases, and points out the obscurity which attends their diagnosis, and also the importance of early diagnosis in the subsequent treatment. He reports one case of sphenoidal sinusitis. PACKARD.

207

Case of Rhinophyma. SOKOLOV, *Protokol des Moskauer Venerolog.-Dermatol. Vereins*, Bd. XV, p. 61.

Illustration and description of immense ulcers of the nose in a man, 34 years old, in whom not only the external form of the nose had disappeared, but in whom there were also growths in the nasal cavity. The ulcer, together with the tissue of the nose, exclusive of the nostril, was removed and formed in rhinoplasty. Through the microscopic examination it was found that this was a case of sarcoma which had given rise to an unusual growth of sebaceous glands. —Ed.

208

Recurrent Nasal Hemorrhage. R. SPEAR, *U. S. Naval Med. Bull.*, July, 1909.

Spear's patient sustained a fracture of the left nasal bone, the vomer and mesethmoid. At the time of the injury there was considerable hemorrhage from both nostrils. The hemorrhage was controlled by packing. There was severe hemorrhage on a number of occasions afterward. The nature of the hemorrhage was peculiar; the bleeding was profuse while it lasted, and stopped apparently when the blood pressure lowered. Several careful examinations of the nasal cavity failed to reveal the source of the bleeding, but in all probability the bleeding point was situated in the right side of the mesethmoid region. The blood either came from a small artery that had been partially torn by the bone fragments or may have come from a damaged plexus.

There was no hemophilia in the boy's history or in the history of his family. As the case progressed and the boy lost more blood he became more anemic. His condition was critical and it was imperative to control the bleeding. Both facial arteries were tied without success. It was noticed that pressure over the right common carotid stopped the bleeding, so under cocaine anesthesia the carotids on the right side were exposed; the external was ligated and a ligature was placed around the internal, but was not tied. This procedure controlled the hemorrhage for thirty hours, when it recurred, but to a much lesser degree. Finally, both nares were plugged with strips of gauze supported by Kyle's long nasal splints. This procedure controlled the hemorrhage. The following day these splints were removed; the bleeding again started, but was controlled by placing two long plugs made of twisted cotton soaked in a solution of boric acid; these plugs were placed in the right nasal chamber well back and upward, on the mesethmoid, and held in position by one long Kyle nasal splint. These plugs were left in place for forty-eight hours, the nasal cavity being kept fairly clean by dropping a little boric acid solution into and about the splint every two hours. The plugs were gently removed and replaced by others of a similar character, which were also left in position for forty-eight hours. These were replaced by one plug which was left in for twenty-four hours. No bleeding occurred after the introduction of the cotton plugs.

During the progress of the case gelatin was given in large quantities by the mouth, as was also calcium lactate and injections of 30 c.c. of rabbit's serum, all with the idea of increasing the coagulability of the blood.—*Ex.*

212

Some Complications and Dangers of Nasal Surgery. H. B. TAWSE, *The Lancet*, Nov., 1909.

Tawse thinks that ethmoidal curetting, the only operation worth doing for nasal polypi and apparently a dangerous procedure, is one which in skilled hands is attended with brilliant results. The dangers are: Hemorrhagic effusion into the eyelids and orbits; orbital abscess; necrosis of the frontal bone; necrosis of the superior maxilla; fracture, punc-

ture, and laceration of the cribriform plate suppurative meningitis; suppurative meningitis apart from injury. severe hemorrhage; and optic neuritis and blindness. The first of these effusion into the eyelids and orbit is very common and of no moment. Orbital abscess, very rare, requires external incision, as does necrosis of the frontal bone and superior maxilla, but such unfortunate occurrences should not deter one from thoroughly clearing out the disease. To be timid with ethmoidal curetting will certainly deprive the operation of much of its success. The cribriform plate of the ethmoid—that bugbear of most nasal surgeons in their early days—is occasionally punctured, fractured, or lacerated, and fear of this has time and again led to failure. But really a little care in watching the position of the cutting end of the curette with regard to the plane of the cribriform plate will prevent any damage. The serious and almost universally fatal complications of the radical operation of the frontal sinus are osteomyelitis of the skull, meningitis, and cerebral abscess. As to the treatment of frontal sinus suppuration Tawse says that in cases where pus escapes freely from the frontal sinus and is producing no ill effect on the general health, and only an occasional headache is complained of, and if the patient can be seen periodically, the risks of operation more than counterbalance the advantages. Intranasal treatment will suffice for the patient's comfort. If, however, any signs of cerebral involvement occur, if the health is undoubtedly suffering from septic absorption, if the headache is intense and persistent, or the infundibulum is narrower and is causing retention, then an operation must be performed. A few not unimportant sequelæ which one notices after operation, and which, although not of vital importance, are responsible for much discomfort to the patient, he mentions. Dryness of the throat and nose, sometimes with crust formation, may follow turbinal and extensive ethmoidal operations, and after the latter postoperative ozena. The risk of infection of healthy sinuses must not be lost sight of, and although this at times is unavoidable, still strict attention to the ordinary principles of antiseptic or asepsis will considerably reduce the risk. —*Ex*

215

Lupus of the Nose. D. A. VANDERHOOF.

Original contribution to *THE LARYNGOSCOPE*, p. 911, Dec., 1909.

225

Bismuth Paste in Nose, Ear and Throat Affections. C. BECK, *Jour. A.*

M. A., Jan. 9, 1909.

Dr. Beck says that he has never used any other treatment for the purpose with so much satisfaction as this, and describes his technic. The principal point is to be able to reach every part of the infected area. He uses four kinds of paste: (1) A paste containing 33 parts of bismuth subnitrate and 67 parts vaselin which is used principally in the localities where the idea is to cover rather than distend and as a local treatment of the nasal mucosa in hydropic rhinitis. (2) A paste containing 30 parts bismuth to 60 of vaselin and 5 parts each of white wax and paraffin, which is of almost universal application, except for filling the defect of simple mastoid operation where a paste containing

less vaselin and double the above amount of white wax and paraffin is used. (3) A still stiffer paste of 30 parts bismuth, 35 parts vaselin, 25 parts paraffin and 10 parts white wax, used only in the radical frontal sinus operation to act as a plug. The syringe used is a powerful instrument working on the thread principle. The flexible tube is essential and must be of metal, as rubber distends and soon breaks. Beck believes that in the first place either the bismuth or the nitrate, coming in contact with the tissues, produces such a change in the inflammatory cells and leucocytes of the infected area that they are enabled slowly to destroy the vegetable organisms. Another factor to be considered is the coating effect of the bismuth to the mucous membrane and his experience has convinced him as to its advantages as a dressing. It also prevents the accumulation of fluid and the ingress of air-carried microbes, and the moderate distention may have a beneficial effect. None of the toxic symptoms of bismuth have appeared in his cases and he has proven the bactericidal effects of the paste, the microorganisms, with few exceptions, disappearing after its use for a short period. It was only in unsuccessful cases that they persisted or reappeared, showing that the paste did not reach all the infected parts, or that a pathologic process, such as sequestra or necrosis, was responsible. Beck reports the following as subjects of experiment at the present time, the results to be reported later: (1) Injections of nose and accessory sinuses, middle ear and its accessory cavities on the cadaver. (2) Comparative study of the chemistry of bismuth subnitrate and other bismuth preparations, and their action on bacteria on artificial culture media, in animals and man. (3) Comparative value of bismuth subnitrate in different strengths and combination of the four ingredients in paste form in chronic suppuration of the nose, throat and ear. (4) Comparative value of bismuth subnitrate, zinc stearate and other zinc salts, calcium salts, barium salts, silver salts, mercury salts and other salts in paste form in chronic suppuration of nose, throat and ear. A tabulated statement of the results of the treatment in over 300 cases and ten case histories are given together with special details of the technic. The author sums up his conclusions substantially as follows: (1). The anatomic and physiologic conditions of the nose, throat and ear and their accessory cavities are important in the healing of chronic suppurations, since they are non-collapsible, lined by mucous membrane, and the mastoid and ethmoids are multicellular. (2) In most cases of nasal accessory sinus suppuration some slight operation such as puncture or middle turbinectomy, is needed in order to allow the proper injection of the sinuses. (3). Middle ear suppurations respond readily to the treatment if the disease process is limited to the cavity of the middle ear, attic and aditus ad antrum, and if there is no necrosis; if there is necrosis and the mastoid cells are involved, the result will be practically nil. (4) The simple mastoid operation is greatly simplified and the time of healing shortened by the filling up of the created defect by the paste. (5) It is the best procedure in the radical mastoid operation, causing more rapid epidermization than any other method. (6) Failure to cure a chronic suppurative middle ear condition by bismuth paste injection is an indication for operation, radical or

semiradical. (7) As a nasal dressing in turbinectomies and septal operations, he has found it better than any other in checking the bleeding, preventing infection and decomposition and synechial formations, especially in ethmoidal operations. (8) With his experience in a large variety of conditions without any serious results or complications, Beck considers the bismuth paste injection a very safe procedure. A thorough knowledge, however, of the pathologic anatomy and diagnosis, is indispensable for obtaining good results. (9) Sufficient time has not elapsed to enable one to estimate definitely the limitations of the method, but to-day he would use it in any case of chronic suppuration of the nose, throat or ear. He wishes distinctly to state that he never uses it in acute conditions, since he has found that in such cases it is followed by violent reaction. (10) It is not the only treatment that will cure or improve chronic suppuration without surgery. Some other modern methods, such as vaccine therapy, Bier's suction treatment, and sinus irrigation are of inestimable value and he has had some excellent results with them, but not so good as with the bismuth paste.—*E.r.*

226

Interpretations of the Radiograms of the Nose and its Accessory Sinuses.

J. C. BECK.

Original contribution to THE LARYNGOSCOPE, p. 711, Sept., 1909.

228

Operative Behandlung des Heufiebers. (Operative Treatment of Hay Fever.) E. BLOS, *Deutsche Med. Wchnschr.*, Aug. 26, 1909.

Blos reports three cases in which he cured the tendency to hay fever by resecting the anterior ethmoidal nerve on both sides to induce permanent anesthesia of the mucosa of the anterior part of the nose. The nerve was resected under chloroform or with local anesthesia plus morphin or with local anesthesia alone.—*E.r.*

231

New Method for Packing the Nostril. W. E. CASSELEERY, *Ill. Med. Jour.*, March, 1909.

Original contribution to THE LARYNGOSCOPE, p. 89, Jan., 1910.

236

Pharyngoscopic Studies. P. FRIEDENBERG.

Original contribution to THE LARYNGOSCOPE, p. 535, July, 1909.

239

Lactic Acid Bacteria in Chronic Suppurative Nasal Conditions.

J. L. GOODALE, *Boston Med. and Surg. Jour.*, July 15, 1909.

During the past four months Goodale treated a series of cases by cultures of bacteria generating lactic acid. These cases included conditions of atrophic rhinitis with ozena, and chronic suppuration of the various sinuses. The preparation was sent twice a week from the laboratory, in 2 oz. bottles, and a sufficient quantity was given to the patient to use in an atomizer. Fresh material was given them every week, with instructions to keep it in a cold place and to observe aseptic precautions

so far as possible in handling it. The patients were told to cleanse the atomizer with alcohol before introducing the culture fluid, and in the case of atrophic rhinitis with crust formations to remove the crusts as completely as possible before employing the spray. Goodale is of the opinion that a distinct effect has been produced by the culture in some cases of ozena, characterized by generalized crust formation. The results appear to be comparable to those produced by argyrol. It remains to be seen, however, whether more than a temporary effect is produced. In localized chronic suppurative sinusitis attended by hypertrophy and polyp formation, no effect could be detected. —*Ex.*

245

Plastic Operations of Growth of Naso-Pharynx.

IWANOFF, *Ztschr. f.*

Laryngol., Rhinol. u. ihre Grenzgeb., Bd. I, p. 545, 1909.

Whenever scarred growths of the soft palate are removed simultaneously with the posterior pharyngeal walls, there is great difficulty in keeping the cavity open, due to their strong tendency to grow again. If the velum and posterior pharynx grow together, provided the uvula remains free, Iwanoff uses, in a case of lues, the history of which he gives, the uvula as plastic material. The uvula is divided by means of a knife into two equal parts; one half is then sewed to the left intersected posterior velum margin, the other to the right. In all plastic operations of the soft palate gum tamponade is absolutely necessary, due to its non-adhesive property; around this a regular gauze tamponade is wrapped. —*Ed.*

248

Prevention of Hemorrhage in Serious Nasal Operations.

L. LÖWE, *Mo-*

natsch. f. Ohrenh. u. Laryngo-Rhinol., Heft 8, 1909.

The diminution of hemorrhage in serious nasal operations may be effected, according to the author, by six means:

1. As a general anesthetic, one should use chloroform, which reduces blood-pressure.
2. The patient must be placed in such a position that the head is as elevated as possible, the feet low, by having the surface of the operating table oblique.
3. Before the operation one should give as many as five injections, submucously, of the following solution: Rp. adrenalin 5, 0, Aq. phys. 25,00, cocaine 0,025.
4. The so-called internal decortication, i. e., the removal of the mucous covering of the inner nose, with the raspator. This is best accomplished at the nasal base and at the lateral wall of the lower passage, but it is also possible at fair distances at the septum in the region of the agger nasi and of the atrium meatus narium medii.
5. For certain cases Dr. Löwe recommends the temporary compression of the arteria sphenopalatina, and points out the means of reaching it.
6. If the solution of adrenalin is by some reason not practical for the gum, the restriction of the hemorrhage can be effected through Heidenhein's stitching process. This consists in placing each stitch

through the gum and periosteum horizontally above and below the intended cut. Between the two stitches the gum may be ripped through without hemorrhage. Dr. Löwe reaches the same results by a clamp process, which he also describes. —Ed.

249

Recent Methods of Examination of the Nose and Throat. J. MACINTYRE,
Glasgow Med. Jour., March, 1909.

Dr. MacIntyre gives a historical review of the improvements which have gradually been introduced in the technic of the examination of the respiratory tract. —Ed.

250

Operation for the Relief of Obstruction of the Anterior Nares.

J. E. MACKENTY.

Original contribution to *THE LARYNGOSCOPE*, p. 552, July, 1910.

261

The Operative Treatment of Deflection of the Nasal Septum. CHARLES W.

RICHARDSON, *Am. Jour. of the Med. Sci.*, Feb., 1909.

A most excellent, concise review of the subject. The author deals briefly with the etiology and symptomatology of the condition. He then gives a historical resumé of the more modern methods of operation for the relief of septal deflections, classifying and shortly describing the various procedures. Dr. Richardson describes a method which he had found most satisfactory prior to the introduction of the submucous operation. After describing the details of the submucous operation he performs, a summary of his conclusions is given as follows "1. The old method gives a septum maintaining its anatomical integrity. The submucous operation gives a flaccid septum, minus certain elements formerly considered essential to its anatomical integrity. This removal of the cartilage and bone seems to have no influence upon the function of the parts, unless removed over too great an area toward the dorsum of the nose.

2. The operation by the old method requires about ten minutes in its consummation; the submucous requires about one-half hour in actual operating time.

3. The old method requires the wearing of a splint for a week or ten days; the packing in the submucous operation is removed in twenty-four hours.

4. In the old method there is considerable pain and discomfort until the splint is removed; in the submucous there is no post-operative pain.

5. In the old method of operating, the patient is confined to bed for several days, and is uncomfortable and feverish until the splint is removed. After the submucous operation, the patient is out of bed at the end of twenty-four hours, and at the end of forty-eight hours is practically well.

6. The old method is rarely attended with perforation. I have had only two in my whole experience. Theoretically, the submucous methods should be attended with like results; practically, perforations do occur.

After performing one hundred and ninety operations by the submucous method, and nearly twice as many by the old method, I have become finally convinced that the submucous method offers the greatest advantages to the patient afflicted with a deflected septum, in the hands of an operator thoroughly skilled in its technique."

PACKARD.

263

Treatment of Epistaxis. B. ROBINSON, *N. Y. Med. Jour.*, July 31, 1909.

Robinson favors plugging the nasal passages by taking a strip of aseptic, absorbent cotton, and twisting it round and round, so that it becomes about the size of the little finger, and then with a good light, a nasal speculum, and a director or stiff probe, fill the lower and middle meatus as far back as the posterior pharynx. After twenty-four or forty-eight hours the plug or plugs begin to loosen by reason of the nasal secretions produced and absorbed, and they should be carefully withdrawn and fresh ones substituted, if necessary. —Ex.

264

Roentgen Treatment of Rhinoscleroma. A. R. RUEDIGER, *Berl. Klin. Wchschr.*, Jan. 25, 1909.

Ruediger has treated 14 patients with rhinoscleroma by applying the Roentgen rays directly or to the external skin, and states that it is thus possible to effect a complete cure. Most of his patients were women and all were from the poorer classes. In one of the typical cases described, the scleromatous masses obstructed and deformed the nose and extended into the palate. The nose and upper lip and the palate through the open mouth were exposed to the rays for two minutes daily. This was kept up for 16 days and resumed after 16 days for 12 days, followed by another interval of 16 days, resuming the exposures for 18 and then for 16 days with the same intervals of suspension. The rhinoscleroma gradually subsided and disappeared and the nasal passages became normally permeable, with no recurrence during the five years since. He used a medium soft tube, with a current of 32 volts and 2 or 3 amperes. When the rays were filtered through tin foil, the exposures were made for four minutes instead of two. —Ex.

265

Immunizing Treatment of Hay Fever. W. SCHEPPEGRELL, *N. Y. Med. Jour.*, Dec. 4, 1909.

In about 80 cases which Scheppegrell has observed, ragweed was the causal factor in every case except one, which was undoubtedly due to the goldenrod. The pollen of the ragweed is not simply a mechanical irritant, like dust, as is usually supposed, but it contains a pungent aromatic compound which acts as an irritant on the nasal mucosa. As a scientific basis for the prevention of hay fever, one must either cause the entire disappearance of the plant which produces the causative factor of the disease, or must artificially develop in patients susceptible to it that degree of tolerance which naturally exists in persons not suffering from hay fever. The former is neither possible nor practicable. The alternative, therefore, is the development of an artificial tolerance to

the irritating pollen in persons subject to hay fever. Such a tolerance is gradually developed in the progress of the disease.

As the staminate flowers of the ragweed contain its pollen, these are made use of by Scheppegegrell. At a period of time varying from two to six weeks the pollen of the staminate flowers are inhaled by the patient. These inhalations are at first made two or three times a day, and later, as the time of the usual development of the disease approaches, more frequently. The inhalation is followed by a slight attack of sneezing, some lachrimation, and a watery discharge from the nose, and then a congestion of the mucous membrane of the nostril. As no inflammation exists, these effects are not disagreeable or painful, and ordinarily pass off in the course of an hour. If the patient takes a walk or other form of exercise immediately after the application is made, the congestion of the mucous membrane is less marked. In a few days, the applications produce less reaction, and more pollen may be inhaled and the inhalations made a greater number of times. Gradually the reactions become less and finally are not observed by the patient. When this is the case the patient is immune to an attack of hay fever at this time.

This immunity, Scheppegegrell finds, is not permanent, and therefore the treatment should not be discontinued until the regular advent of the hay-fever season, when it should be entirely discontinued, as the natural pollen of the air takes the place of the artificial inhalations. Scheppegegrell believes that if the staminate inhalations are resumed after the cessation of the hay-fever period, a permanent tolerance will gradually be developed which will give the patient permanent immunity. —*Ex.*

268

Treatment of Diseases of the Nose. E. SPRENGER, *Med. Press and Circular*, Aug. 18, 1909.

If the nasal mucous membrane becomes chronically affected from any cause, the nose does not act as under normal conditions; it does not receive the physiologic stimulus necessary to health; it changes still more into a condition of disease, for that reason again it does less work, etc. Spengler terms this a "circulus vitiosus." To bring about an improvement in the diseased part we must provide for longer pauses for rest, that is, we must bring about a temporary state of rest, and for this the mechanical, thermic and chemical stimuli must be kept back as much as possible. To accomplish this Spengler constructed small, clear yellow balls or pellets of porous India rubber, the so-called sponge rubber. They are about 12 mm. in diameter, and are furnished with a stalk for the purpose of easy handling and cleanliness. These little balls are inserted into the lower part of the nostril and retained there for from half to three-quarters of an hour several times a day. First, a feeling of fullness is felt in the nostril, but also one of increased warmth. Very soon, however, a feeling of great relief comes on. The sensation of dryness that is often so troublesome disappears as the increased blood supply increases the secretory action of the glands. When the pellet is removed the nostril that has carried it is free, just as after an application of a weak solution of cocaine, and agreeably moist. It can now be cleansed easily. This condition of relief often lasts from

one to two hours, and when it passes off can easily be brought about again by the same means. Wearing the pellets regularly for several months is said to cause a marked improvement, or even complete recovery.—*Ex.*

269

Treatment of Acute Rhinitis. J. TRUMPP, *Münch. Med. Wchnschr.*, Nov 16, 1909.

Trumpp has applied bolus alba in his own person and in his family and practice with brilliant success as a means of aborting and curing rhinitis, the extreme fineness of the particles sucking up by capillary attraction the bacteria and the secretions, and thus drying out the parts while killing the bacteria. He uses an ordinary powder insufflator; success depends on applying a layer of the powder over the entire inflamed surface, repeating the insufflation three or four times in fifteen minute intervals at first, and later at hour intervals. If there is much swelling a little adrenalin opens a way for the powder. Three or four insufflations the second day generally complete the cure. He applied this bolus treatment also in four cases of primary diphtheria of the nose, refraining from serum treatment. In all recovery was complete by the fourth or sixth day, without complications. Prompt recovery was also observed in a case of ozena of a few weeks' duration; the cure has persisted for two months to date. The powder comes away readily when the nose is blown and does no harm if it is swallowed. The best results are attained when the nasal passages are wide and readily accessible.—*Ex.*

270

Saugbehandlung der Nase. (Treatment of Intranasal Disease by Suction.)

WALB, *Deutsche Med. Wchnschr.*, No. 1, 1909.

The author claims that suction by means of a properly regulated apparatus is of great value in acute accessory sinus inflammation, and of some value in chronic cases.

YANKAUER.

272

Demonstration of a New Method of Posterior Nasal Tamponade. J. WOLFF

Original contribution to *THE LARYNGOSCOPE*, p. 130, Feb., 1909.

274

Cleft Palate. V. P. BLAIR, *Interstate Med. Jour.*, March, 1909.

Blair illustrates certain anatomic points, with their surgical bearing, by illustrations of frozen sections, diagrams and plaster casts. He discusses the etiology of cleft palate, and describes Brophy's operation, which he considers the most effectual operation devised. He has found a supplementary wire approximating the alveoli in front to be advantageous. He passes the wires so that they enter the orbit just above its floor, using needles curved to three-fourths of a circle. Personally, Blair sees no reason why repair of the lip should not closely follow closure of the hard palate, thus correcting facial deformity.—*Ex.*

278

Widening of Palatal Arch. L. W. DEAN, *Jour. A. M. A.*, March 20, 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 103, Feb., 1910.

280

Macrostoma Associated with Cleft of Soft Palate. G. H. EDINGTON, *Glasgow Med. Jour.*, May, 1909.

The case is that of a little girl in whom a persistent mandibular fissure stretched from the angle of the mouth to the tragus.—ED.

282

Meine Erfahrungen bei 53 Gaumenspaltooperationen mit Technischen Mitteilungen. (Operation for Cleft Palate.). C. HELBING, *Berl. Klin. Wchnschr.*, Sept. 27, 1909.

Helbing's article was presented at the recent international dental congress at Berlin; it reviews his experience in fifty-three cases, with success in 75 per cent. He has found that the speech seems to be better the younger the patient at the time of the operation, while the technic is no more difficult in children under three months if correspondingly small instruments are used. By an early operation the child escapes many dangers to which it otherwise would be exposed, defective feeding, choking, infections in the respiratory and digestive organs, and otitis. The mortality of young infants with cleft palate not operated on is extremely high. As a rule, he operates at two sittings.—EX.

283

The Operation of the Cleft Palate by Means of Peroral Intubation.

KUHN, *Deutsche Ztsch. f. Chirurg.*, Heft 4 and 5, 1909.

As important advantages are cited the ease of the narcosis, the easier laying aside of the tongue, the better view of the operative field, the niceness of the coming-to, tamponade and sewing.—ED.

284

The Form of the Hard Palate. H. P. MOSHER.

Original Contribution to *THE LARYNGOSCOPE*, p. 255, April, 1909.

285

Gaumengeschwüre bei Abdominaltyphus. (Ulceration in the Palate in Typhoid.) J. NOVOTNY, *Wiener Kl. Wchnschr.*, June 3, 1909.

Novotny states that in 102 cases of typhoid at Chvostek's clinic in Vienna, during the last ten years, larynx or palate complications, or both, have been observed in nearly twenty-four per cent, including 6 cases of severe ulceration in the palate. In one case besides the typhoid bacilli in the blood, stool and urine, paratyphoid B. bacilli were cultivated from the ulcer in the palate.—EX.

289

The Tonsils as Eliminating Organs. W. S. ASHHURST, *Am. Jour. of Med Sci.*, July, 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 107, Feb., 1910.

295

Postoperative Tonsillar Bleeding. L. COHEN, *Jour. A. M. A.*, Aug. 28, 1909.

Dr. Cohen remarks that the operation on the tonsils is now in a transitional stage between partial and complete removal, and the amount of hemorrhage seems to be one of the considerations. The amount of blood lost in the operation is variable, but its seriousness depends largely on the individual. His experience has been that there is greater hemorrhage in tonsillectomy than in tonsillotomy, because the vessels are cut off above their terminal filaments. He has adopted tonsillectomy, however, because he has learned better to control the bleeding, and the loss of blood in his complete operation is now less than it formerly was with his tonsillotomies. He reports three cases, two of his own and one of Damianos and Hermann, illustrating the difference between the old and non-surgical method of controlling hemorrhage by the hemostat pressure and the modern one by tying the arteries. In one of his cases a fatal result was hardly avoided from secondary hemorrhage due to Monsell's solution in the tonsillar fossa, which he now never uses. He does not credit much to hemophilia, believing that most cases are due to an open bleeding artery. He gives the technic of his operation and answers the objections, such as the small space one has to work in. An important point is not to remove the patient from the table until all bleeding points are stopped and the throat is perfectly dry and the patient cannot swallow any blood. He speaks favorably of the preliminary use of calcium salts and of adrenalin as the clear field afforded by the latter compensates for any slight tendency to secondary hemorrhage.

—EX.

296

Chronic Diseases of the Fauical Tonsils. S. G. DABNEY, *Ky. Med. Jour.*, Dec. 1, 1909.

Dr. S. G. Dabney states: There are two classes of abnormal tonsils: First, the simple hypertrophied, with symptoms of obstruction and reflex irritation; second, diseased hypertrophic or atrophic tonsils, causing local or general infection, or both. General or distant diseases are believed to enter through the tonsils. In the modern treatment of diseased tonsils and adenoids the tendency is toward radicalism in their removal.

As to adenoids, the description of Meyer is almost as complete to-day as it ever was except that adenoids are regarded as a possible port of entry for general diseases, and should be removed. —EX.

299

The Fauical Tonsils Considered From a Medical and Surgical Standpoint.

L. C. DEANE. (San Francisco.) *Cal. State Jour. of Med.*, March, 1909.

From the experiments of Drs. J. Grober, Kayser, Goodale and Hendelsohn, Deane, while not claiming that the tonsil is the main channel of tuberculosis infection, believes it is "one important means of contagion."

His experience led him to great care and caution in the post-operative treatment, as the radical operation (tonsillectomy) "opens up numerous lymphatic channels in their exit from the tonsil, and until granulations

have formed over them they can act as carriers of infection." He gives the history of two of his own cases, in which, after operation, alarming sepsis occurred, in one, involving the heart. Previous to his operations the mouth, teeth and pharynx, also the nose and naso-pharynx, are cleansed with alkaline antiseptic solution, using a tooth brush, and the throat swabbed with hydrogen peroxide. Following the removal of the tonsil, after all bleeding has been checked, the fossa tonsillaris is painted with a five to ten per cent solution of silver nitrate. EATON.

302

Early Immunization the Essential Function of the Tonsil. R. H. GOOD.

Original contribution to *THE LARYNGOSCOPE*, p. 439, June, 1909, and *Ill. Med. Jour.*, Aug., 1909.

305

Report of a Fatal Case of Status Lymphaticus Occurring in a Patient Operated on for Tonsillar Hypertrophy Under Cocain-Adrenalin Infiltration. T. J. HARRIS, *Ann. of Otol., Rhinol. and Laryngol.*, Sept., 1909.

The patient was a short, muscular, working-man of thirty years. One-sixtieth grain of strychnine sulphate was first administered by mouth. One-half hour later the patient was sent to the operating room and had a 1-5 of 1 per cent of cocain hydrochlorate in a normal saline solution containing two drachms of 1-1000 adrenalin-chloride injected into the tonsils. The solution was freshly prepared before the operation. The tonsils were very cryptic and the contents of the first syringe containing $1\frac{1}{2}$ drachms entirely escaped and was expectorated. A second syringe of the same was injected. Of this, at the outside, not more than thirty minims could have been retained. There was, then, in all approximately 1-12 of a grain of cocain retained, and from eight to ten minims of a 1-1000 solution of adrenalin-chloride. After the first injection the patient complained of feeling badly, vomited, and had a slight convulsive seizure. At the conclusion of the operation, which lasted two minutes, the patient was found pale and unconscious and died in spite of strychnin, oxygen and artificial respiration. From the autopsy, it appeared that the patient died, in all probability, of an overdilated right ventricle, due to an enlarged thymus with its action on the trachea and recurring laryngeal, with the cocain-adrenalin injection acting as exciting cause. SCHEPPEGRELL.

314

Report of a Case of Teratoma of the Tonsil. R. D. JEWETT.

Original contribution to *THE LARYNGOSCOPE*, p. 366, May, 1909.

318

The Facial Tonsils and the Teeth. G. H. MAKUEN, *Jour. A. M. A.*, June 19, 1909.

Dr. Hudson-Makuen emphasizes the importance of the faucial tonsils from the dentist's standpoint. Diseased faucial tonsils affect the teeth in three ways: First, by impairing the general nutrition; second, by contributing very largely to the local invasion of the teeth by the numerous

bacteria that infest their crypts; and, third, by their pressure, they interfere with the alignment of the teeth and with the normal development of the maxillary bones. That diseased tonsils affect the general health has been proved beyond the shadow of a doubt and the teeth suffer with it, as well as directly by contact with its filthy catarrhal secretion. The third manner in which the teeth are affected by hypertrophied tonsils has, so far as Makuen is aware, not been mentioned in the literature, but he considers it of no little importance. These glands are sometimes very large and dense, and their constant pressure on the surrounding structures may cause changes that will seriously embarrass the normal circulation and respiration, produce neuralgia, etc., as well as interfering with the normal development and arrangement of the teeth. The indirect effect of diseased and hypertrophied tonsils on the teeth and their settings through forced mouth-breathing, has been described fully by numerous observers. Makuen pleads, therefore, for the eradication of all glandular obstructions to the normal development of the teeth and alveolar arches, prior to any attempt to remedy the structural defects of these organs. He thus sums up his conclusions. The faucial tonsils and the teeth are in close approximation and they are alike subject to disease or degeneration. Diseased tonsils and teeth are locally and systematically unhygienic. Secretions from the tonsils may infect the teeth, and, contrariwise, the tonsils may be infected by the teeth. Diseased tonsils and teeth cause headache, earache and facial neuralgia, and they become a direct source of infection to the glands of the neck and, through the efferent lymphatics, to the general respiratory and circulatory systems. Hypertrophied faucial tonsils often become so large as to affect the ear, the circulation of blood, the nerve supply of the face and head, and the normal development of the alveolar arches. The teeth serve important purposes, but the exact function of the tonsil has not yet been fully demonstrated. The importance of preserving the teeth has been fully recognized, but the diseased tonsil is not worth preserving, for it has lost its usefulness and become a menace to the human economy. The only rational remedy for diseased tonsils is total extirpation. —*Ex.*

320

The Tonsil as Entrance for the Tuberculous Bacillus. Its Relation to the Glands of the Throat. A. R. MARCELLI, *Arch. Ital. di Laringol.*, Oct., 1909.

On the right side of the throat of a young girl there was found a chain of glands among which there was an especially large one in front of the sterno cleidomastoideus muscle. Pectoral organs, healthy; no tuberculous bacilli in the sputum. Right tonsil hypertrophied. Small pieces of the tonsils were removed with a Hartmann tongue, and on being examined under the microscope were found to contain sparse but unmistakable tuberculous bacilli under the epithelial layer, especially of the crypts and also in the parenchyma.

The author then discusses the anatomical connection which exists between those glands of the throat and the tonsil, with special reference to Wood's investigations.—*F.D.*

321

Diseased Tonsils. E. MAYER, *Jour. A. M. A.*, Aug. 28, 1909.

Dr. Mayer says that the conditions of the faucial tonsil which call for operative interference are: (1) Simple hypertrophy interfering with breathing; (2) diseased conditions of the tonsils themselves causing local or constitutional infection. He takes up these causes in order and gives an account of the results of the giving of attention to the enlarged tonsils in school children in New York City. Some of the children after operation showed an improvement of 100 per cent over their former ability to work and in behavior, from the simple removal of hypertrophied tonsils. Within six months 76 out of 81 operated on at one time had been promoted and were doing well in the advanced grades. Passing to the second cause, he speaks first of the affections of the tonsil itself that indicate the need of extirpation, and, secondly, the constitutional disturbances connected with its disease. The most common of all these in the first category is acute lacunar or follicular tonsillitis, of which the recurrences are sometimes so frequent as to make the children lose much time from their school work. He goes over the literature of the other various non-malignant tonsillar diseases, to a considerable extent, enumerating the various forms. The second class of cases are then mentioned, and he says that the list has become a very formidable one. A careful study of the voluminous literature of the subject does not at all change his opinion, formerly expressed, as to the tonsils as the portal of infection of a large number of very serious conditions which can be averted by prompt extirpation of these organs. He concludes with the statement that it is imperative on the physician to advise thorough extirpation in all cases of unusual hypertrophy, recurrence of inflammation, or any diseased condition.—*Ex.*

328

Present Status of the Tonsil Operation. A Collective Investigation.

G. L. RICHARDS, *Med. Record*, Dec. 11, 1909, and *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 160, Feb., 1910.

330

The Tonsils. C. M. ROBERTSON, *Jour. A. M. A.*, Aug. 28, 1909.

Dr. Robertson describes in detail the anatomy and development of the normal tonsil and its variations and relations, and also gives the facts known as to its physiology. At birth the tonsil is so small as to be unimportant. It attains its full development by the sixth or eighth year and then begins to atrophy. By the age of twelve or fourteen it should have disappeared and should show only as a cicatricial mass between the palatine pillars. Any tonsil that is markedly visible after that age may be considered pathologic. Clinically, nearly all children at six have adenoids and tonsils, and at eight probably 85 per cent have them. When they exist, pathologically, all kinds of infections may occur. Some authors claim that the tonsil has a part in digestion, but experiment does not prove this, and Stöhr claims that they have a phagocytosis action, which the author does not credit. If the normal tonsil is removed too

there is no disastrous after-effect, but rather an improvement in health owing to an increased freedom of respiration. Robertson thinks that the function of the tonsil is an ancestral or developmental one, and if it has any function it must be one which is active only during the first part of a child's life between the sixth and eighth years, at which limit the gland has passed its acme of usefulness and normally should disappear by atrophy. If it remains he holds that, after the sixth or eighth year, tonsils are pathologic and only detrimental, in rendering the individual the less able to combat infections. He recognizes the fact that he is making rather a sweeping statement which may be criticized by some, but he thinks the investigations, so far as published, of the physiology of the tonsil, having been made on pathologic glands, have been from an erroneous standpoint.—*Ex.*

337

Tonsils and Adenoids. CHARLES M. STEWART, *Montreal Med. Jour.*, Dec., 1909.

The writer gives a valuable study based upon observation of 7,000 cases during his term as Resident House Surgeon at Golden Square Throat Hospital, and describes four clinical varieties: The imbedded, the sessile or flat, the prominent, and that with a marked lingual prolongation. The writer believes that the day for the tonsillotome is nearly over, and would not advise its use in a patient over fourteen years of age. An excellent model of the writer's tongue-depressing forceps is shown. The use of Hovell's paste (tannic acid 3 pts., and gallic acid 1 pt.), is advocated in secondary hemorrhage, applied with the finger. WISHART.

341

Hyperexia and Death After Tonsillotomy. D. J. G. WISHART, *Can. Lancet*, Oct., 1909.

Abstracted in *THE LARYNGSCOPE*, p. 152, Feb., 1909.

342

Malignant Tumors of the Tonsil. G. B. WOOD, *Pa. Med. Jour.*, March, 1909.

The author reports two cases of sarcoma of the tonsils upon which he operated. He goes over the literature of the subject of malignant tumors of the tonsils which has been published since the year 1884. He discusses the methods of procedure to be chosen in operative interference upon such growths under varying circumstances. The article is accompanied by a table of the published cases of sarcoma of the tonsils.

PACKARD.

343

Functional Relations of the Tonsils to the Teeth. G. H. WRIGHT, *Boston Med. and Surg. Jour.*, May 20, 1909.

Wright describes 19 cases and discusses the lymphatic anatomy of the region to show the connection between the teeth and the tonsils, and in conclusion offers the following observations:

1. When a tonsil is normal, infection from the external surface is rare.

2. Secondary infection through the lymph channels is the usual source.

3. There are four periods of molar eruptions, with some variations at times when the tonsils may enlarge without infection or inflammation, viz., at two years, six years, twelve years and seventeen years.

4. Tonsils, though slightly enlarged, when not infected, return to normal with complete eruption of the teeth.

5. Diseased teeth are a prolific source of enlargement of the glands through proximity of membranes, either directly, by infection, or by toxins.

6. In the treatment of the tonsil by the specialist, may we not include as a routine the observation as to carious teeth and a recognition of these four periods of eruption coincident with slight enlargement?—*Ex.*

344

The Transmutation of the Epithelium of the Tonsil Into Connective Tissue Cells. J. WRIGHT.

Original contribution to THE LARYNGOSCOPE, p. 488, July, 1909.

345

Resumé of Some Work in Infection Through the Tonsillar Crypts. J. WRIGHT.

Original contribution to THE LARYNGOSCOPE, p. 321, May, 1909.

348

Black Hairy Tongue—Hyperkeratosis Linguae. H. ARROWSMITH.

Original contribution to THE LARYNGOSCOPE, p. 544, July, 1909.

349

Ranula. J. C. BECK.

Original contribution to THE LARYNGOSCOPE, p. 352, May, 1909.

350

Carcinoma of the Tongue. H. T. BUTLIN, *Brit. Med. Jour.*, Jan. 2, 1909.

Butlin analyzes the results of his operations for carcinoma of the tongue in 197 cases. Among the inferences are the following: There are no advantages in postponing the operation on the glands until they are enlarged. The removal of the contents of the anterior triangle is hardly sufficient as a routine procedure, and he advises that the dissection be carried into the posterior triangle, and to the glands in the parotid region, removing even the lower part of the parotid salivary gland if necessary. His notes are insufficient to decide the necessity of removing the glands on both sides of the neck. A wider removal of the glands, however, appear necessary, in the following cases: 1. Those cases in which the glands on both sides of the neck are enlarged. 2. Those cases in which the glands are affected only on the side of the neck opposite the disease. 3. Those cases in which the disease is seated on both sides of the tongue, or in which it reaches to the middle line of the tongue. 4. Probably it ought to be done in those cases in which microscopic examination gives reason to believe that, although

the primary disease is apparently only of small extent and depth, it is much more malignant than usual; when, for instance, columns of cancer cells are found running deeply down between the muscular fibers. Butlin's figures do not support Cheate's suggestion as to the removal of the muscles in every case of cancer of one-half the tongue, but he thinks it desirable to carry it into effect in more advanced cases, especially when the disease lies beneath the tongue in the floor of the mouth. The objections are impairment of speech and of mastication. He does not consider the evidence in favor of removing the tissues between the primary disease and the glands strong enough to justify the extra risk involved. The anterior part of the dorsum appears to be the least dangerous seat of cancer in relation to affection of the glands. In opposition to the general impression among surgeons, Butlin thinks that it may fairly be assumed that cancer originating in the floor of the mouth can be removed with a good prospect of success, provided it is not very extensive and has not involved the bone. As to recurrent disease, the results of operation for its removal, whether of the tongue or glands, have been so bad that operators are counselled to make the first operation as complete as possible, in the belief that the only hope of the patient lies in the thorough manner in which this operation is performed.—*Ex.*

351

Hyperkeratosis Linguae. R. H. CRAIG.

Original Contribution to *THE LARYNGOSCOPE*, p. 49, Jan., 1909.

354

Cancer of Tongue, Mouth and Jaw. R. B. GREENOUGH; C. C. SIMMONS;

R. M. GREEN. *Boston Med. and Surg. Jour.*, May 6, 1909.

Greenough, Simmons and Green conclude their analysis as follows:

1. One hundred and seventy-two cases of cancer of the tongue, mouth and jaw appear in the records of the Massachusetts General Hospital in the years 1890-1904, inclusive. Of this number 112 patients were operated on, 50 were judged inoperable, and 10 refused operation.

2. Of the 112 operations of all varieties, 20 resulted in death within 60 days (17.8 per cent).

3. Of cancer of the tongue and floor of the mouth, there were 98 cases of which 62 patients were operated on and 36 cases were inoperable or the patients refused operation. Of the 62 patients operated on, in 58 (93.5 per cent) the end-result is known; 62 cases of operation gave an operative mortality of 8, or 12.9 per cent. Of the 58 cases in which the end-result is known, 10 patients were free from recurrence 3 years or more after operation (17.2 per cent). Of the 40 cases in which recurrence did take place after operation, in 38 death occurred before the lapse of 3 years after operation. Operations for cancer of the tongue involving section or resection of the jaw caused a much higher operative mortality and no greater percentage of cures than the intrabuccal operations.

4. Of cancer of the lower jaw, there were 40 cases; 28 operable, 12 inoperable. The operative mortality of 28 cases was 10, or 35.5 per cent. In 26 cases of operation the end-result is known, and in 5 cases (19.2

per cent) the patients were free from recurrence 3 years or more after operation.

5. There were 14 cases of cancer of the upper jaw; 10 patients were operated on and 4 were not. The end-result is known in 9 of the 11 patients operated on, and in each of these 9, death occurred within 3 years, although there were no deaths as an immediate result of operation.

6. Cancer of the tonsil, soft palate, or fauces occurred in 11 cases, 8 of which were inoperable and 4 were submitted to operation. One patient was alive and well seven years after operation (25 per cent). There was no operative mortality.

7. Cancer of the cheek occurred in 9 cases, 1 of which was inoperable. Of the 8 patients operated on, 2 died of operation (25 per cent), and none was cured.

8. For reporting statistics of the end-results of operations for cancer, a standard should be established, requiring the publication of reports of all consecutive cases entered in the hospital records. For the acceptance of percentages of cures pathologic proof of the existence of carcinoma should be presented, and no case should be considered in which the patient has not survived the arbitrary 3-year period.—*Ex.*

359

The Philosophic Anatomy of the Tongue. E. SOUCHON, *Jour. A. M. A.*, May 1, 1909.

Dr. Souchon defines the aim of philosophic anatomy as the study of the reason of things, of the principles and general laws of anatomy, and the relation of cause and effect. It includes also, last, but not least, the special features presented by organs and the endeavor to explain their reason, their why and their wherefore. With this object in view, he takes up the tongue, remarking that this organ, the nose and the skin are the only organs of special sense which perform other functions. It is the only organ except the heart which presents a base, a body and an apex. It is the only organ which can be protruded out of the cavity which contains it. No other organ can assume such various shapes and is so movable. Other peculiarities are the differences of its papillae in the anterior two-thirds and the posterior third. It is one of the organs which present a dual structure in accordance with its dual functions, motor and sensory. Its color varies more than that of any other organ. It is more solid than any other viscus, the only other muscular one being the heart, which is hollow rather than solid like the tongue. Its papillae are really similar to those of other mucous membranes, but larger and more specially developed. It is the only organ presenting the three kinds of nerves, i. e., a nerve of special sense; a nerve of ordinary sensation, the glossopharyngeal; and nerve of motion, the hypoglossal. There are other peculiarities, such as that the gustatory is the only nerve of special sense that is a hard nerve, the others, the olfactory, the optic and the auditory, being remarkably soft nerves.—*Ex.*

367

Vincent's Angina. H. ARROWSMITH.

Original contribution to *THE LARYNGOSCOPE*, p. 340, May, 1909.

369

Malocclusion of Teeth. W. W. BABCOCK, *Jour. A. M. A.*, Sept. 11, 1909.

It is surprising, says W. W. Babcock, that so little advance has been made by surgeons in the treatment of protruding or receding lower jaw. In Von Bergmann's elaborate "System of Surgery" four lines are given to the subject, and works on dental practice and orthodontia mention but a single operation, and that similar in principle to the one used before the civil war. Babcock reports a case in which he operated by section of the ramus on both sides and forcing back the body of the jaw so that the teeth could be placed in the best possible occlusion. An interdental splint was constructed but not found of advantage, and recourse was had to pressure of an ordinary aluminum chin cup, connected by elastic bands to a head piece. By regulating the tension of the bands it was found possible to bring the teeth into occlusion. The appliance was worn about nine weeks, but the patient began to use his jaw about two weeks before it was removed. The patient's appearance has been greatly improved. His mouth has been kept closed, enunciation of words is better, nasal respiration, which was not the rule before, has been established, food is practically masticated, and the tongue is no longer kept between the teeth. Possibly because of the operation, or the establishment of nasal respiration, the patient no longer suffers from winter tonsillitis, though the tonsils remain enlarged and the chronic catarrh continues. The operation is fully illustrated and explained. Babcock says that in such cases one should not limit himself to a single operation, but consider the possibilities of the case; the fact is that by surgery it is possible to change the relation between the body of the lower jaw and the rami in various ways, and if the correction of the deformity and fair occlusion can be obtained without dividing the dental arch the preferred operation is the section of one or both rami along the lines adapted to the particular case. Where it is desired to enlarge the dental arch he suggests an operation by making two vertical incisions connected by a horizontal one, and sliding the two separated sections of the jaw on each other to the necessitated amount and fixing them in the proper position for the purpose of relieving the deformity. To change the plane of occlusion of only a segment of the jaw, a bilateral V-shaped or wedge-shaped resection after the method of Angle may be used, or an osteoplastic section after the method of Hullihen. Somewhat similar operations are to a lesser degree available for the deformities of the upper jaw, but they are unfortunately more liable to hemorrhage and other complications; the fixation of the parts, however, is less difficult than in the mandible. The article is fully illustrated. —Ex.

372

Rachen und Kehlkopfsymptome bei der Syringomyelia. (Throat Symptoms of Syringomyelia.) E. BAUMGARTEN. *Berl. Kl. Wchnschr.*

[1] Aug. 23, 1909.

Baumgarten reports a case of paralysis in the throat and palate, with sensibility and reflexes normal, in which further investigation revealed

syringomyelia. There had been no other noticeable disturbances beyond the change in the voice, but the paralysis of the palate and atrophy of the right side of the tongue confirmed the diagnosis of syringomyelia. He cites 26 similar cases from the literature and points out that the symptoms in the throat may be the first sign of the affection. In 9 of the 27 cases there was atrophy of the tongue, and there was paresis of the palate in 17. In 3 cases the hoarseness came on suddenly. —*Ex.*

376

Communicability of Vincent's Angina. W. H. BUHLIG, *Quarterly Bull. N. W. Med. School*, June, 1909.

Buhlig reviews a number of cases of Vincent's angina, and concludes that it is necessary to believe that the condition is communicable within narrow limits. He calls attention to the purse-string tobacco bag frequently passed from one to another, the string being drawn tight by the teeth, as a possible medium of infection. —*Ex.*

377

Report of the Removal of Two Pharyngeal Tumors (Fibroma and Lymphoma) with Ligation of External Carotid in One Case. E. P. CALHOUN. Original contribution to *THE LARYNGOSCOPE*, p. 932, Dec., 1909.

379

Harelip Twins. C. H. CARGILE, *Southern Med. Jour.*, Oct., 1909.

Cargile records a case of "harelip twins," on whom he operated when they were about three months old. The deformities were not alike, one being single hare-lip with only slight deformity of the dental arch, while in the other, though the palate was perfect, there was double fissure of both lip and arch with anterior projection of the intermaxillary bone. —*Ex.*

380

Lesions of the Mouth. T. E. CARMODY, *Colo. Medicine*, Jan., 1909.

Carmody discusses cancer, sarcoma, syphilis and tuberculosis of the mouth and gives a series of tables illustrating the differential diagnosis between these conditions as affecting the jaw, tonsil, lip and tongue. The article is fully illustrated. —*Ex.*

384

Ulcerative Stomatitis. H. B. CUSHING, *Montreal Med. Jour.*, Aug., 1909.

Dr. Cushing reports cases to illustrate the association of a mildly contagious form of ulcerative stomatitis with the presence of Vincent's bacillus, i. e., with the symbiosis of *Bacillus fusiformis* and *spirocheta dentium*. They occurred in institutions, in children from 3 to 8 years of age, all of whom suffered from malnutrition or ill-health, and there seemed to be a mild infectiousness about the disorder. The disease began as a small superficial ulcer at the margin of the gums and afterwards extended in some cases in the form of an adherent false membrane or superficial necrosis to the mucous membrane of the cheek, the tongue or the fauces; there was a characteristic fetid odor, mild

constitutional disturbance and enlargement of the neighboring lymph glands. Smears from the lesions showed the characteristic organisms in great numbers. All recovered in from one to three weeks. Potassium chlorate given internally seemed to hasten the recovery. —*Ex.*

393

Some Affections of the Oral and Nasal Cavities which are Related to Skin Diseases. J. A. FORDYCE.

Original contribution to THE LARYNGOSCOPE, p. 134, Feb., 1909. and N. Y. Med. Jour., March 6, 1909.

402

Cancer of the Parotid. G. A. HENDON, *Southern Med. Jour.*, March, 1909.

Hendon reports five cases, in all of which operation was successfully performed, though one patient, aged 71, succumbed within a year. —*Ex.*

404

Experimental Parotitis. I. C. HERB, *Arch. of Internal Med.*, Sept., 1909.

The principal, distinguishing or characteristic features of a diplococcus isolated by Herb from a case of mumps are the following: Gelatin is very slowly liquefied. In broth a slight cloudiness is produced in twenty-four hours; later a tenacious deposit forms in the bottom of the tubes. Milk is soured in 24 hours and coagulated in 48 hours. Potato produces a grayish-white abundant growth. Agar cultures show pearly white, tenacious, pin-point, round, discrete colonies. There is no production of indol. The organism occurs most frequently as a diplococcus, occasionally in small groups or chains of from four to six elements. It is non-pyogenic. When injected into Steno's duct in monkeys and dogs this diplococcus causes a diffuse non-suppurative parotitis, the infiltration being composed of mononuclear cells, and occasionally also orchitis of a similar character. In one case of human mumps (the only one studied) a similar rise of the opsonic index for this organism took place. Herb believes that there is consequently good reason to regard this diplococcus, which corresponds well with the description given by Laveran and Catrin of the diplococcus isolated by them from cases of mumps, as the actual cause of mumps and the disease produced in dogs as genuine experimental mumps. —*Ex.*

408

Pemphigus of the Throat—Report of a Case. L. M. HURD.

Original contribution to THE LARYNGOSCOPE, p. 689, Sept., 1909.

412

Large Calculus from Wharton's Duct. R. H. JOHNSTON.

Original contribution to THE LARYNGOSCOPE, p. 51, Jan., 1909.

418

Present Status of Oral Surgery. H. G. LANGWORTHY.

Original contribution to THE LARYNGOSCOPE, p. 876, Nov., 1909.

420

Cancer of Mouth and Lip. E. LAPLACE, *Pa. Med. Jour.*, Nov., 1909.

Laplace claims that cancer of the mouth and tongue is especially destructive to life because of the ease of infection from the lymphatics and the excessive virulence of the disease in that locality. A clinical differential diagnosis should be accompanied by laboratory tests for early diagnosis. The ocular or cutaneous tuberculin test may eliminate tuberculosis, the Wassermann reaction will eliminate syphilis, whereas the Crile blood test may finally determine the cancerous diathesis. A radical operation should then be performed. Removal of a specimen for microscopic examination is always risky for fear of spreading the disease. The parts should be cauterized thoroughly with the thermocautery after an operation and allowed to heal by granulation or a secondary suture performed. X-ray or radium treatment is of doubtful value in the mouth. Early diagnosis and early complete removal must remain the treatment at present. All tentative cauterizations must be avoided and the patient submitted at once to a radical operation, remembering that warts, moles, etc., may be considered as potential cancers. —Er.

422

Chronic Epipharyngeal Periadenitis. J. E. LOGAN, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

This is a disease of the tissues of the epipharynx which exhibits a pathology of a distinct type. It undoubtedly exists there by reason of previous active recurrent inflammations of the glandular structure just as we find existing in chronic tonsillar inflammations in the oropharynx.

The chronic type of periadenitis in the vault exists with very much greater frequency than we have been inclined to recognize. The complications arising from this disease are many. Those of the ear are of especial importance—these manifest in chronic progressive deafness and also in chronic suppurative otitis media. The influence of this inflammation and hyperplasia upon the muscles attached into and around the Eustachian orifice, viz: Tensor tympani, the tensor palati and levator palati—is, to my mind, a reasonable explanation of the development of chronic deafness and more plausible than the term otosclerosis which is vague and indefinite.

The amount of the vault hypertrophy is not of vital importance. Its location in the fossae of Rosenmüller is of greatest significance. This applies with equal force to chronic suppurative conditions. Acute infectious diseases of the upper respiratory tract can be traced with reasonable accuracy to their origin in this diseased structure and culture-bed in the vault. The removal of this tissue is best accomplished by stripping away all vestige of this hyperplasia from the fossae by the clean fingernail—great care being exercised in removing everything from about the Eustachian lip. The result of the stripping is an active inflammation which develops a brittleness and enlargement of the growth. After forty-eight hours all vestige of this tissue can be removed with ease by the curette. In over a thousand operations upon adults I have never given a general anesthetic.—A. A.

423**Some Considerations Concerning the Development of the Jaws.**J. M. MAGEE, *Maritime Medical News*, May, 1909.

The evil effect upon the development of the infant's jaws of the nursing bottle is very clearly explained, and the writer is very positive that "every singer of world-wide repute has been nursed, not fed, in infancy."

WISHART.

429**Streptococcic Throat.** R. MCKINNEY, *Jour. A. M. A.*, May 29, 1909.Abstracted in *THE LARYNGOSCOPE*, p. 159, Feb., 1910.**433****Pathology and Treatment of Recurrent Quinsy.** R. C. MYLES.Original contribution to *THE LARYNGOSCOPE*, p. 930, Dec., 1909.**434****Papula-Erosive Syphilids in Mouth Nine Years After Infection.** L. NIELSON.*Ugeskrift for Læger*, Jan. 21, 1909.

Nielsen's patient was a man of 28 years who had been infected with syphilis nine years before and had been smoking some of late. Typical pale spirochetes were cultivated from the scrapings of the lesions in the mouth. The primary infection had been thoroughly treated, it was supposed. In two other patients the syphilids developed on the tongue eleven and thirteen years after infection and recurred whenever the patient smoked much. —*Ex.*

446**Elongated Styloid Process.** C. W. RICHARDSON.Original contribution to *THE LARYNGOSCOPE*, p. 771, Oct., 1909.**448****Palatopharyngeal Contractures.** J. O. ROE, *N. Y. State Jour. of Med.*, July, 1909.

In Roe's case, the fauces were so extensively lacerated during an attempt to excise the tonsils, about four months before, that when healing had taken place there was a complete synechia or adhesion between the soft palate and the pharynx. There was complete occlusion of the posterior nares, except for a very small opening through which an ordinary small silver probe could be passed. The adhesion was so thick and the tissues so infiltrated with inflammatory deposits, the result of the extensive inflammation that followed the operation, that the obtaining of a healed opening at each side through this thickened tissue proved to be practically out of the question. As it was necessary to cover but one surface of this opening, the upper or palatal side was most available. A rather broad flap was taken from the inside of the cheek near the lower jaw, including sufficient submucous connective tissue to assure the vitality of the flap. This was then brought down and the end turned backward and upward around the lower border of the soft palate, which had been sufficiently denuded of its mucous membrane around its lower border

to secure union. This flap was then stitched at the sides and also through and through along the upper border of the end of the flap that had been turned up behind the palate.

Complete union of the flap took place, and on healing there was no undue contraction at the site of these flaps, nor was there the slightest inclination for a readherence of the soft palate to the pharynx at any point, all of which was very gratifying. The surfaces from which the flaps had been taken were speedily covered with mucous membrane and soon all traces of it disappeared. The central portion of the palate was thickened, and this thickened tissue was utilized by cutting and stitching it into shape so as to form a very desirable uvula. As the levator palati muscles had not been sufficiently injured to destroy their function, by the construction of this new uvula the function of the soft palate in closing the posterior nares during deglutination and phonation was almost completely restored. —*Ex.*

465

Employment of Silver Wire to Bridge the Gap After Resection of a Portion of the Lower Jaw. SINCLAIR WHITE, *Brit. Med. Jour.*, Nov. 27, 1909.

White reports a case of a boy, nine years of age, whose left side of the lower maxilla was removed. Free exposure was secured by carrying an incision from the left angle of the mouth downward and backward to the neck. The bone was divided in front at the level of the canine tooth, and behind just above the junction of the body with the left ramus, and the tumor, together with two inches of the body of the maxilla, removed. The periosteum covering the lower border of the excised segment was carefully preserved. The resected surfaces of the lower jaw were pierced with a drill to the depth of three-quarters of an inch. The drill hole in the body was horizontal, and placed near its lower margin, so as to miss the teeth roots; that in the ramus was vertical and somewhat posterior to the mandibular foramen. The ends of a suitable length of stout silver wire were jammed tightly into the drill holes, and the wire completely covered by suturing together the mucous membranes of the cheek and the floor of the mouth over it. A small drain tube was placed in the neck end of the wound and retained for forty-eight hours, and the mouth was rinsed frequently with hydrogen peroxide solution. A little pus formed in the track of the tube, but the wound in the mouth healed quite kindly. At the present time, except for the skin scar, there is, absolutely no external deformity. He can open his mouth almost to the full, and when the jaws are closed the teeth on the right side meet accurately those in the corresponding side of the upper jaw. He is able to bite soft things, and has to be restrained from attempting greater masticatory feats. White thinks it probable that new bone may form around the wire from the preserved periosteum and still further strengthen the mandibular arch. —*Ex.*

466

Bacteriology of Ludwig's Angina. E. M. WILLIAMS, *New Orleans Med. and Surg. Jour.*, July, 1909.

Microscopic examination of a smear of the pus taken from Williams' case showed streptococci in large number, associated with bacteria

closely resembling the colon bacillus, the latter probably accounting for the distinctly fecal odor of the pus. —*Ex.*

467

Case of Primary Tuberculosis of the Fauces, Posterior Pharynx and Palatal and Lingual Tonsils Cured by Tuberculin Injection.

B. A. WINSLOW.

Original contribution to *THE LARYNGOSCOPE*, p. 849, Nov., 1909.

469

Some Lessons in Tonsil Surgery. C. B. YOUNGER, III. *Med. Jour.*, June, 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 575, Aug., 1909.

475

Surgical Treatment of Insufficiency of the Velum Palati. BOTEY, *Revista Barcelonesa de Laringol.*, No. 1, p. 48, 1909.

Through experience three kinds of cases may be noted: (a) Shortness of the palatal vault without insufficiency of the velum palate; (b) insufficiency of the velum palate in a normal vault; (c) shortness of the palatal vault with insufficiency of the velum palate. The chief and most constant symptom is nasal speech. The flowing back of liquids in drinking is not so unusual.

Botey's treatment consists in sewing the posterior palatine arches to the posterior pharyngeal wall. The author mentions several instruments which he invented and uses for this purpose. The technic consists in the cutting out of one or two elliptical sections of the mucous membrane of the posterior pharyngeal wall, after which the edges of the incision are sewed up. The results are very good, but not complete. —*Ed.*

484

Tonsillar Excision. O. T. FREER, *Jour. A. M. A.*, Feb. 13, 1909.

The anatomy of the faucial tonsils and the method of their extirpation are described by Dr. Freer, who also gives the pathologic conditions requiring their removal. Hypertrophy occurs in two forms. One is the well-known spherical tonsil and the other is the intramural or buried tonsil, a condition in which the organ cannot escape from the tonsillar fossa but distends and deepens it. A third condition requiring removal is commonest in childhood; the tonsil is normal or nearly so in appearance but requires excision on account of frequent attacks of follicular or parenchymatous tonsillitis. The fourth condition requiring complete removal is the cicatricial tonsil where it has been shrunken by chronic inflammation to a hard nodule and is permeated by crypts frequently distended with cheesy contents and often discharging foul pus. Freer's paper is summarized by him as follows: "The most satisfactory and perfect method for the removal of all varieties of diseased tonsils is their dissection from the tonsillar fossa with knives of suitable form. Tonsillotomy with the tonsillotome or snare, cautery dissection and the attempt to cause shrinkage of the tonsil by galvanocautic slitting of the crypts are timid and unreliable methods which should be abandoned.

There is less danger of prolonged hemorrhage from the rational excision of the tonsil described in this paper than from the usual methods of its removal. Not only tonsils which act as obstacles in the throat because of their size, but all varieties of chronically diseased tonsils should be completely dissected out." The article is illustrated. —*Ex.*

500

Total Excision of Tonsil. H. B. MYLVAGANAM, *Ind. Med. Gaz.*, Aug., 1909.

Mylvaganam draws the tonsil forward with a pair of small vulsellum forceps toward the middle line, then detaches the anterior pillar from the underlying tonsil with a blunt-pointed curved scissors and the whole tonsil is removed. —*Ex.*

502

Anesthesia in Tonsillectomy and Adenoidectomy. F. R. PACKARD, *Jour. A.*

M. A., Aug. 28, 1909.

As a general premise to his paper in the *Jour. A. M. A.* on anesthesia in tonsillectomy, F. R. Packard says that, in his opinion, tonsil and adenoid operations in children and young persons under eighteen should practically always be done under a general anesthetic; over that age when the patient has sufficient self-control and can cooperate, he prefers local anesthesia with cocaine. He also lays down the following general propositions as applicable in all cases in which general anesthesia is employed: 1. The personal equation of the anesthetist, including his experience, judgment, and all other qualifying factors, is by far the most important element in any operation under general anesthesia. Thus in spite of the dangers of chloroform, so much greater than those of ether, if he felt that the anesthetist could give it better than ether, he would prefer to have him do it. 2. The patient should be under observation or control, if possible, for at least twelve hours before the operation, and after it until he has completely recovered from the effects of the anesthesia. It is very hard sometimes to insure against the taking of food by children before the operation. The dangers from lodgement in the larynx and of pressure from a distended stomach are obvious. 3. Operations under general anesthesia should be done, if possible, in a hospital or in the patient's home. The extreme risk of allowing the patient to go out just after recovering from ether or chloroform has been repeatedly demonstrated. 4. If the operation is performed elsewhere than in a hospital, oxygen and other restorative means should be provided beforehand. He always insured this, including tracheotomy instruments. 5. Although there is a general impression among physicians that mixed anesthesia in which the narcosis is started with one anesthetic and maintained with another, is dangerous, this would seem to be unsupported by statistics. There are several reasons which render the subject of anesthesia in tonsil and adenoid operations one of the greatest importance: (a) Children thus suffering are apt to present the condition generally called status lymphaticus, and as such are notoriously bad subjects for any type of general anesthesia. (b) The mechanical obstructions to proper respiration from the presence of adenoids and enlarged tonsils interfere with the inhalation of an anesthetic so

that the administration is prolonged and the amount required sometimes very large. The large quantity of mucus in the throat also interferes and increases the difficulty. (c) Another difficulty is the problem of not interfering with the operator, and to obviate this he takes pains to get his patient thoroughly anesthetized before doing any work. The best method of giving ether or chloroform, in Packard's opinion, is the so-called drop method on gauze, except in patients who require prolongation of the anesthesia when he has the anesthetist change to the vapor method, passing the ether through warm water in a wash bottle by means of a bulb compression apparatus. He always operates with the patient in the dorsal decubitus, with the head somewhat dropped over the end of the table. He believes that the upright position adds greatly to the danger of ether and chloroform, besides increasing the risks of choking by blood and tissue or mucus entering the larynx. The danger of aspiration pneumonia is not to be ignored. As for the anesthetic, he decidedly prefers ether, and he quotes Gurlt's and others' statistics showing the respective mortality from the use of the various anesthetics. Nitrous oxid anesthesia is so brief that its usefulness is limited. Ethyl bromid is dangerous, and ethyl chlorid has the drawback of introducing great rigidity of the jaws when used for any length of time, and besides, he thinks, does not diminish the sensitiveness of the mucosa as do ether and chloroform.—*Ex.*

503

Removal of Tonsils. N. H. PIERCE, *Jour. A. M. A.*, Aug. 28, 1909.

—Dr. Pierce discusses the methods of dealing surgically with diseased tonsils. Anything short of complete extirpation is not the idea, though temporizing measures may be resorted to under special circumstances. The best of these consists in slitting up the lacunae and cauterizing them with nitrate of silver daily, until as many of them as possible are made to heal open. This method, however, is never permanently satisfactory, and the results are less so with hot applications. In all cases there should be a period of preparation, as tonsillotomy is a hospital operation. The patient should be sent to the hospital the day before, and a thorough examination made of the physical condition, together with a microscopic and chemical examination of the urine. Tonsils should not be operated on while inflamed, and women and girls should not be operated on while menstruating. Special care should be taken to detect the status lymphaticus or hemophilia, and the presence of pulsations about the tonsils should be noted. Inspection should be supplemented by palpation. A course of calcium chlorid for a week before the operation is recommended by Pierce, and if there is any doubt about the coagulability of the blood, its index may be tested by the method of Rouver. General anesthesia should be employed in all young children and in nervous adults, and in order to aid in the abolition of the deep laryngeal reflexes we may swab the tonsillar region with a 10 per cent cocaine in 1 to 1,000 adrenalin solution, after the patient has become relaxed. Local anesthesia is permissible only in older children and in adults who can be controlled. The position that Pierce adopts is with the patient on the right side, as throwing a less burden on

the heart. A sand bag is put under the head,, which is drawn close over the edge of the table, and a nurse keeps the patient balanced on the right side. The operator is seated so that his line of vision is on a line with the patient's mouth. The tonsil is loosened by a knife after being drawn forward by a vulsellum forceps. Pierce uses a special form of knife for this purpose. After loosening, the tonsil is twisted out of its bed and included in a snare. Then the other tonsil is secured in the same way and both are removed. If there remain portions of tonsil they must be carefully removed by the snare or tonsillar punch. Careful inspection should be made before the patient is removed from the table, for hemorrhage, and if it continues, in spite of pressure, search should be made for bleeding points which are usually found in the middle third of the wound. The carotids are out of the way, but there may be a loop of the lingual thrown up in the base of the tonsil causing severe hemorrhage, which can be controlled by means of a hemostat or deep ligature. He has never seen a case that demanded ligature of the carotids. For pedunculated tonsils he does not hesitate to recommend the old Matthieu tonsillotome. For long, thin, small tonsils which are occasionally the seat of cholesteatomatous disease, the scissors are better adapted, after the method of Robertson. After the operation the patient should be kept in the hospital and in bed for from 24 to 48 hours and given only liquid or soft food without condiments. A gargle should be given and continued until the wound is healed, the formula he recommends being salicylic acid 10 c.c., spirits of nitrous ether 15 c.c., alcohol solution formal (1/10) 30 c.c., oil of wintergreen, oil of cloves, aa, glycerin, q. s. ad 120 c.c., S.: Half a teaspoonful to half a glass of hot water, and gargle every two or three hours.—*Ex.*

504

After-Treatment of the Tonsil Wound. E. PYNCHON.

Original contribution to *THE LARYNGOSCOPE*, p. 116, Feb., 1909.

505

Sheet of Directions Given the Patient After a Tonsil Operation, Including the Treatment of Post-Operative Hemorrhage. E. PYNCHON.

Original contribution to *THE LARYNGOSCOPE*, p. 431, June, 1909, *Va. Med. Semi-Monthly*, May 21, 1909 and *Ill. Med. Jour.*, Aug., 1909.

512

Removal of Tonsil. B. D. SHEEDY, *Med. Record*, Sept. 25, 1909.

Sheedy says that tonsils in the young serve an important purpose and should not be removed unless they are so far diseased that their normal function is interfered with. In such cases they no longer act as a fortification and protection against bacteria, but may become the means of entry of these enemies to health. Immunity is produced by the tonsils; natural immunity is caused by inflammations, and artificially acquired immunity is produced in the tonsillar crypts by agglutination and the development of opsonic power.—*Ex.*

516

Chirurgische Behandlung der Mundhöhlenkrebse. (Cancer of the Mouth.) P. STEINER, *Deutsche Ztschr. f. Chir.*, Jan., 1909.

Steiner states that 10.3 per cent of the patients with cancer of the mouth, operated on at Dollinger's clinic at Budapest, have been cured with no recurrence for more than three years. The record includes sixty-one cases of cancer of the cheek, the patients between twenty-seven and seventy-two, with 15.4 per cent cured without recurrence for three years and 11.5 without recurrence for six years. Only one of the eight patients with cancer of the gum was free from recurrence for seven years and only one of the four with cancer of palate or tonsil. An operation was attempted in only twenty-five of the fifty-one cases of cancer of the tongue and 69.2 per cent died during the first year from recurrence. The pre-disposing influence of smoking and chewing tobacco, congenital anomalies, scars, psoriasis and leucoplakia was evidenced anew in this material. Only three per cent of the patients were women. The various procedures followed are described in detail. —*Ex.*

525

Tonsillectomy. S. YANKAUER.

Original contribution to THE LARYNGOSCOPE, p. 329, May, 1909.

533

Zur Kasuistik der Stirnhöhlengeschwülste. (Tumor of the Frontal Sinus.) R. HERZENBERG, *Deutsche Med. Wchnschr.*, Nov. 4, 1909.

Herzenberg's patient was a man of 56 with a cystic tumor for fifteen years, for which he refused operation until it measured 38 by 35 cm. An incision released 1,800 gm. of a reddish brownish fluid and the brain was found much compressed, while the bone had been worn away. The case is remarkable from the absence of brain symptoms and of pain or other sensation except the discomfort from the large tumor, although after its removal there was room for the fist between the skull and the brain. —*Ex.*

534

Observations on Some Unusual Case of Frontal Sinusitis. L. M. HURD.

Original contribution to THE LARYNGOSCOPE, p. 611, Aug., 1909.

548

Intranasal Frontal Sinus Operation: The Accessibility of the Sinus and the Prognosis of the Operation. T. C. WORTHINGTON.

Original contribution to THE LARYNGOSCOPE, p. 940, Dec., 1909.

552

Report of a Fatal Operative Case Showing Developmental Absence of the Outer Sphenoidal Wall and in its Place a Large Vein Communicating Directly with the Cavernous Sinus. Autopsy. F. P. EMERSON.

Original communication to THE LARYNGOSCOPE, p. 43, Jan., 1909.

557

Freilegung der Keilbeinhöhle und des sphenoidalen Abschnittes der Hirnbasis vom Rachen aus. (Access to Base of Brain Through the Nasopharynx). L. LÖWE, *Zentrbl. f. Chir.*, April 10, 1909.

Löwe apologizes for adding another to the twenty-one methods on record for exposing the base of the brain, but he justifies his proposed technic by stating that it is much simpler than any of the others; only local anesthesia is required for it, and no incision is made in the face, while the nose is left intact. All that is necessary to have ample access to the optic chiasma, the hypophysis and the anterior pons region is to open up the sphenoidal sinus and this is easily done through the roof of the nasopharynx, pushing mucosa and periosteum apart, to incise in the median line, and open a passage through the body of the sphenoid. Before the operation a strip of cambric is passed through each nostril and out through the mouth and tied around the ears, thus holding the soft palate out of the way. The tongue is held down by a strip passed in through the pharyngotomy incision and out through the mouth, the ends tied tight together over the chin. The instruments used have to have rather longer handles than usual and be a little stronger to work at the depth required. He describes the technic in detail and mentions a number of anatomic points useful to bear in mind in operating in this region. —Ex.

558

Myxofibroma of the Sphenoidal Cavity. F. MASSEI, *Arch. Ital. de Laryngologia*, July, 1909.

The author tells of a young man, 26 years old, who suffered from difficult breathing which increased during the night to attacks of suffocation. A large new growth of the naso-pharynx was found, which was red and flexible and which became apparent by pressing down the tongue behind the velum palatinum. The tumor was removed with a cold snare, whereby it was discovered to have a long stem and to consist of three ends. The stem had been at the roof of the pharynx and a small declivity showed itself a few mm. above the right choana. By means of the probe it became possible to penetrate through this opening in the sphenoidal region into a sort of canal. The author is of the opinion that he had here a remnant of the above canalis cranio-pharyngeus through which the polypus in sphenoidal cavity had grown toward the naso-pharynx. —Ed.

560

Report of a Probable Case of Sarcoma of the Sphenoidal Sinus With Remarks. D. ROY, *Ann. of Otol., Rhinol. and Laryngol.*, June, 1909.
Abstracted in THE LARYNGOSCOPE, p. 196, Feb., 1910

567

Suppurative Ethmoiditis. F. KRÄUSS, *N. Y. Med Jour.*, April 24, 1909.

Krauss reports two fatal cases of suppurative ethmoiditis in children. He describes three acute types of ethmoiditis and sums up as follows:

1. There is an increasing conviction that acute suppurative ethmoiditis

causing orbital and cerebral symptoms is not so rare a condition as has been thought.

2. It is often rapidly fatal, especially in the young.

3. Indications for operation in acute ethmoiditis are sudden increase in temperature, delirium at night, tumor formation in the inner wall of the orbit, the slightest exophthalmos. Operation should not be delayed too long. As in appendicitis, early operation is a harmless procedure, later operation generally useless.

4. When there is bilateral exophthalmos, operation is generally useless, as the disease has probably extended through the cavernous and circular sinuses, causing a general toxemia and pyemia, or fatal brain lesion. —*Er.*

571

Expansion of Maxillae. E. A. BOGUE, *Jour. A. M. A.*, Aug. 7, 1909.

After referring to former publications by himself and others, Dr. Bogue refers to his later work in expansion of the maxillary arches before the temporary teeth have been cast off and its effect on the development of the nose and its sinuses. He has had assistance from rhinologists who have examined the children before anything was done and after the spreading had been completed. In perhaps twenty or thirty cases he has succeeded in relieving nasal stenosis by gradual expansion of arches of temporary teeth. His conclusion is, that in those cases in which a rapid spreading of the upper maxillary is applicable—that is, in which permanent teeth are sufficiently developed and erupted for the operator to be able to attach his apparatus firmly and to apply the necessary force promptly—that method is distinctly preferable for the class of nasal stenoses that has been under discussion, for the reasons given by Dr. G. V. I. Brown in his paper read before the American Medical Association last year. When, however, the difficulty is recognized early enough to have it corrected by means of apparatus attached to the temporary teeth he has found that the latter method, being distinctly preventive, becomes distinctly preferable. He gives reports from various physicians in regard to cases of this kind, and also reports two cases in which the operation did not completely produce the desired effects, and the reasons why it did not. Epitomizing his experiences and those of all whom he has consulted, he says it seems that the best results obtainable, both for nasal passages and the dental arches, are those which follow on orthopedic or orthodontic operations, commenced as early as the diagnosis can be clearly made; and these operations are accomplished by gradual pressure stimulating normal growth; but in children over fifteen or sixteen years of age the nasal septum is most promptly and easily straightened by the application of positive force, rapidly applied and retained until the nasal troubles are remedied, after which the dental arches can have the ordinary orthodontic treatment.

—*Er.*

573

Maxillary Readjustment. G. V. I. BROWN, *Jour. A. M. A.*, March 27, 1909.

Dr. Brown explains and illustrates the method of exercising direct pressure on the maxillae, originated by him, and describes its advan-

tages. He thinks that probably too much stress has been laid on local factors, adenoids, etc., in the etiology of palatal deformities, and that a general tendency to irregular development must be reckoned with as a chief cause in most of these cases. The appliance used by him for separating the maxillae consists of bands attached to the cuspids and molar teeth on each side, so joined that when a bar with screw and nut is attached across the palate in the bicuspid region, the force applied by turning the nut will cause pressure against all the teeth on each side of the dental arch. Only very gentle pressure is used, and very little pain or inconvenience is caused in producing a marked separation of the maxillae in this way. The relief of the contracted nasal conditions is at once apparent, and it is a curious fact that children suffering from nervous symptoms attributable to nasal obstructions almost immediately become less nervous, have better appetites, and otherwise show improvement, even while the appliance is still fixed in their mouths. Brown believes that this treatment can be made of great value in safeguarding against tuberculosis. There are thousands of children who are unquestionably more susceptible to pneumatic and bronchial affections on account of imperfect breathing, and methods to improve this function will be a factor deserving consideration. In case of hare-lip and cleft palate, compression methods are called for, and his methods for this purpose have been described in former articles (*Jour. A. M. A.* March 18, 1905, and March 2, 1907). In his summary Brown says: "In otherwise normal cases the maxillae should be separated to improve contracted nasal conditions, and the earlier this may be done the better the result. In infants with hare-lip and cleft palate, the parts should be readjusted by gradual methods, care being taken not to disarrange more than may be actually necessary, those structures which, though invisible, are nevertheless in course of development. In cases in which very wide fissure actually exists, the width of the fissure should be reduced and the form of the palate corrected before plastic operation for closure is attempted." The benefit to the health and general development of growing children thus cared for, he thinks, can not be overestimated. —*Ex.*

574

An Unusual Case of Chronic Antral Suppuration. W. R. BUTT.

Original contribution to THE LARYNGOSCOPE, p. 863, Nov., 1909.

581

The Value of the Röntgen Photography for the Proof of Dental Root Diseases in Empyema of the Maxillary Sinuses. HENRICI, *Ztschr. f. Laringol., Rhinol., etc.* Bd. 2, p. 7. 1909.

Dr. Henrici points out the importance of dental root diseases in the etiology of the disease of the maxillary cavity and sees in the Röntgen-rays a means for a certain diagnosis of dental diseases. He recommends for dental photography the method given by Sjögren, and reports three cases, among them one in which, through Röntgen methods, it was possible to diagnose a dental cyst. —*Ed.*

602

Sinus Disease. C. G. COAKLEY, *Jour. A. M. A.*, Sept. 25, 1909.

Dr. Coakley insists on the importance of a thorough examination before deciding to recommend the intranasal or external route for disease of the accessory sinuses in all but the very acute cases complicated by cellulitis, when an immediate external operation is indicated. This examination should include the determination of the number of sinuses involved; a skiagraph of the sinuses and of the nasal passages; the general condition of the patient; as marked disease of the arteries, heart, lungs or kidneys render the external operation far more serious. Determine, if possible, whether the disease is acute or chronic, and if acute decide whether the history indicates a simple inflammation of a previously healthy sinus or to an exacerbation of a chronically diseased one. In the latter case it is wiser to defer an external operation until the acute symptoms have subsided. The severity of the symptoms, especially headache and its effect on the patient, should be noted. The ultimate result of the treatment must be carefully explained to the patient. Intranasal methods relieve and may cure, but the cavities remain and may become again infected. External operations remove the disease but leave a sometimes disfiguring scar, to which patients may object. Intranasal treatment implies frequent operations at short intervals, hence many prefer the more thorough external operation. The neurasthenic patient who is prostrated each time an operation is attempted should be urgently advised to submit to the latter. Very narrow nasal chambers add greatly to the difficulty of intranasal operations and to such patients with chronic suppuration of the frontal, ethmoid and sphenoid the external operation is advised. When considering the diseased conditions of the various sinuses requiring external operation, it seems best to divide them into acute and chronic. In acute frontal, ethmoid and sphenoid involvement accompanied by marked edema of the skin of the forehead, eyelids or side of the nose, exophthalmos, orbital cellulitis, local heat, tenderness, etc., with or without a rise of temperature, an external operation is imperative and should be done at once for fear of meningeal or intranasal complications. On the other hand, Coakley would not invariably advocate external operation for the relief of slight local edema and swelling without first trying to relieve the condition by intranasal treatment. Very rarely one meets with an osteomyelitis of the superior maxillary associated with acute maxillary sinusitis. Such cases should be treated by a large opening and drainage through the gingivo-buccal fold. All other cases of acute disease of this sinus may be satisfactorily treated intranasally. The chronic suppurations of the frontal, ethmoid and sphenoid sinuses requiring external operation are: (A) Those associated with multiple polyp formation of the nose, here an external operation may be relied upon to cure. (B) Frontal sinuses of large size and extensive prolongations and one or more septa can seldom be so drained by intranasal operations as to prevent recurrence of symptoms with every succeeding attack of severe acute rhinitis. If the patient's condition admits it, Coakley therefore advises external operation in these cases. (C) Closed empyemata of the frontal sinus, as shown by the recurring

attacks of superorbital pain without history of any considerable discharge and in which the skiagraph shows involvement of the frontal are best treated by an external operation. (D) In cysts of the frontal and of the ethmoid region which do not bulge into the nasal cavity the patients are fit subjects for external operation. Any attempt to evacuate the cysts through the nose is here, with the alterations of the anatomic structures, too much guess work to be called good surgery. (E) Those in whom a fistula has formed leading from the frontal or ethmoid are advised to have an external operation, the question of scar here does not affect these patients, as they are already disfigured and may be improved by the operation. Coakley's present belief is that very few cases of chronic suppuration of the antrum need anything more than a thorough opening through the inferior meatus to effect a cure. If they do not recover promptly he searches for disease in the frontal or ethmoid cells and finds that, by curing the disease there, the antrum promptly ceases to discharge. If, however, there is a tendency to recurrence two or three times a year from attacks of acute rhinitis he recommends a thorough opening of the antrum through the canine fossa.—*Ex.*

606

The Orbital Route to the Accessory Sinuses. P. FRIDENBERG.

Original contribution to *THE LARYNGOSCOPE*, p. 604, Aug., 1909, and *Am. Jour. of Surg.*, July, 1909.

613

The Ocular Complications of Nasal Sinus Disease. ARNOLD KNAPP, *Am.*

Jour. of the Med. Sci., July, 1909.

The most common orbital complication of nasal sinus disease according to Knapp is the so-called mucocoele, a dilatation of the frontal and ethmoidal sinuses without inflammatory signs. Inflammation of the sinuses is associated with external or orbital signs whenever the inflammation invades the intervening bony wall. Subperiosteal orbital abscesses are not infrequent in children. The important part played by nasal sinusitis in orbital abscesses and cellulitis has only been recognized in recent years. The author thinks the importance of the maxillary antrum as a factor in causing orbital complications has been exaggerated. Sphenoidal sinusitis is especially associated with disease of the optic nerve. Ocular paralyses are not infrequently the only manifestations of orbital complications. Neuralgia and asthenopia are commonly associated with sinus affections. Some observers have brought sinus disease into relation with a group of eye affections comprising iridochoroiditis, glaucoma and detachment of the retina. He thinks there is a tendency to be overenthusiastic in attributing eye conditions so universally to sinus and intranasal disorders.

PACKARD.

615

Accessory Sinus Inflammations. D. B. KYLE, *Jour. A. M. A.*, Sept. 25, 1909.

Dr. Braden Kyle reviews the symptoms, diagnosis, and treatment of acute inflammations of the accessory sinuses, which he says must

be considered, depending on whether they are primary or secondary. Primary inflammations are of rare occurrence, but they may be brought about by injury or contiguity of tissue. In some cases in which they may apparently occur careful examination will reveal evidence of previous inflammation. An important pathologic subdivision of acute inflammation of these cavities is with or without infection. However, in acute catarrhal inflammation, unless it clears up, in from 24 to 48 hours, it is sure to become infected, so that they can all be considered under the same heading. With the possible exception of the maxillary sinus, these inflammations may be attended with mental phenomena, headache, neuralgia, and curious eye symptoms. The causes may be various, irregularities in the formation of these cavities, occupation, etc., are to be considered. The obstructive lesion interfering with the ventilation and drainage is usually not located in the sinuses themselves, but is in the hiatus semilunaris and infundibulum or vicinity. This nasal obstruction may be produced by many conditions, septic deviations, enlargement of turbinate bodies, new growths, etc. Orbital abscess may be secondary to this disease, and blindness may result from an internal extension of the inflammation. Edema of the lids is one of the most significant symptoms, and paresis or even paralysis of the eye muscles may occur. The inflammatory processes in these parts do not differ from those of other mucous membranes except that they pass through the various stages with greater rapidity, so that the difference is really only one of intensity. As a rule a combined infectious process within one of these cavities shows irregular systemic symptoms, unless the physiologic wall of the closed cavity has broken down and rapid general septic infection takes place, when clinical phenomena becomes pronounced. The thickness of the walls of the sinuses plays an important part in the production of symptoms, and brain and other serious symptoms are more likely to appear with thin-walled cavities. There is usually history of exposure to cold or influenza or other infectious diseases. Tenderness marked over the sinus region and increased by percussion occurs. The patient has a curious symptom referable to the eyes, he says that when he tries to read and looks up, the eye on the side of the sinus disease hurts. There is slight edema of the lids, together with ptosis, which enables the physician to tell whether one or both sinuses are involved. There is no limitation of the pain to nerve points. The irregularity in size and form of cavities makes the various tender points pointed out by some authors misleading, and this is specially true of the frontal and ethmoidal cavities. While from a diagnostic standpoint the value of the X-ray can not be over-estimated, it should never be solely depended on. The author urges the conservative method of dealing with these conditions, and he has been able in the majority of cases to open the cavity by the natural orifice, by carefully shrinking the surrounding tissues. The contour of the intranasal structures must be carefully observed, but by following this plan the necessity of radical interference has, in his practice, been practically eliminated in acute cases. Since the primary lesion is intranasal the treatment should be directed toward cutting short the inflammatory attack, reducing the swelling of the nasal mucous membrane, especially about the orifices of the sinuses so as to

permit of free drainage. Once the normal opening is established it is remarkable how quickly an inflammatory lesion will clear up. Personally he does not use suprarenal extract on account of the after irritation it causes. He reports a case treated in this conservative way with success, though at the first examination, an external opening of the frontal sinus seemed inevitable. He has not infrequently seen cases in which an accumulation of gas in the antral cavity has produced all the symptoms of an acute inflammation which rapidly disappeared by directing the treatment to the orifice of the natural cavity. He does not mean to say that we are never to do the radical operation, but wishes to call attention to the fact that many patients who are subjected to it, ought to have been cured without. The treatment therefore in general should be directed to the cause and to the removal of any interference with the natural drainage. —*E. J.*

616

Sinus Skiagrams in the Erect Posture. S. LANGE.

Original contribution to THE LARYNGOSCOPE, p. 368, May, 1909.

618

Accessory Sinus Suppuration. H. W. LOEB, *Jour. A. M. A.*, Sept. 25, 1909.

Dr. Loeb illustrates the arrangements of the accessory nasal sinuses to show how intranasal operations are practicable, when indicated. In case of the maxillary sinus, an intranasal operation generally suffices for simple uncomplicated suppuration, provided no dental complication exists. While simple puncture is often sufficient the best results are obtained by extensive resection of the naso-antral wall owing to the better drainage and the tendency of these openings to contract or close up altogether. This naturally requires the removal of a part of the inferior turbinate and it is important to see that the opening enters the sinus. The position of election for opening the sinus is just below the attachment of the middle portion of the inferior turbinate. In the main the inferior turbinate courses along the wall horizontally but sometimes it has a downward and backward slope. This location would then be above the lowest portion of the floor and it would be well to carry the resection further down and back. In some acute cases perforation through the nose will afford, in frontal sinus, sufficient drainage and cure, but ordinarily it must be admitted that nothing short of an external radical operation suffices. We can not expect any good result in cases in which the frontal sinus extends over the orbit and is affected in this portion. Intranasal operation therefore has only a limited utility in disease of the frontal sinus. Ethmoid suppuration, when uncomplicated, practically always responds to the intranasal treatment, for the entire ethmoid labyrinth may be exenterated by operation through the nose. The most anterior cells, however, cannot always be easily reached, and we must always respect the cranial wall of the sinus. Drainage alone does a great deal toward affording relief and can be secured from the lowest portion through the nose. In uncomplicated cases where the ethmoid alone is involved with the sphenoid, the nasal route is the only one to be

advocated, and is relied on more and more. While drainage can not usually be secured from the most dependent portion, it is usually followed by relief if the opening is made permanent. The likelihood of optic nerve involvement in case of sphenoid suppuration must be considered, and the slightest suspicious eye symptoms call for immediate operation. Loeb calls attention again to an observation made two years ago that in cases in which the middle turbinate has an inclination backward and downward, the floor of the sphenoid lies at a lower level than the ethmoid or at its level. This has been confirmed by the present study as shown in the illustrations. These latter, as given in the paper, are very instructive as regards the relations of the parts to the nose and to each other.—*Ex.*

619

Study of the Anatomic Relations of the Optic Nerve to the Accessory Cavities of the Nose. H. W. LOEB, *Ann. of Otol., Rhinol. and Laryngol.*, June, 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 57, Jan., 1909.

627

Oculo-Orbital, Intracranial and Cerebral Complications of Diseases of the Nasal Accessory Sinuses. A. ONODI.

Original contribution to *THE LARYNGOSCOPE*, p. 801, Nov., 1909.

631

Optic Neuritis Associated with Disease of the Frontal Sinus and Ethmoidal Cells. S. D. RISLEY, *Jour. Nerv. and Ment. Disease*, May, 1909.

Dr. Samuel D. Risley says it should be remembered that the mucous membrane lining the interior of the nose is continuous through narrow drainage canals with the lining "mucoperiosteum" of all the accessory sinuses. These sinuses are likely, therefore, not only to participate in the infectious diseases of the nasal membrane, but by their anatomic situation are removed from any favorable opportunity for natural protection by the usual methods of increased secretion and free drainage. The intimate anatomic connection of the inflamed membrane lining the thin bony walls of these cavities; the frequent lapses in the bony continuity of their walls; the network of sutures which in adult life unite the different centers of ossification; the numerous foramina for the passage of nerves, arteries, veins and lymph channels, all give opportunity for the migration of infectious products to contiguous tissues. Since the walls of these sinuses form so large a part of the walls of the orbit, it is not cause for surprise that the contents of the orbit are liable to invasion. Disease of the sinuses does extend to the orbital tissues, leading to abscess of the orbit and even to severe optic neuritis. In one case there was orbital abscess with optic neuritis, contracted field, swollen papilla and vision reduced to 1/5. The order of events in the history was complete blocking of the upper nasal fossa with polypoid mass and hypertrophy of the middle turbinate, purulent infection of right frontal sinus, partial drainage into the antrum of Highmore, necrosis of the floor of the frontal sinus and extension to the orbit, prop-

tosis of the eyeball, optic neuritis, complete relief and restoration of normal vision by operation. In another case, there was double optic neuritis, contracted fields, no scotomata, V. equal 1/5 in each eye, successive crops of retinal hemorrhages, violent fronto-occipital headache and insomnia. After consultation with Dr. Welsenburg a decompression operation was advised for relief of the optic neuritis, notwithstanding the absence of focal symptoms. Operation was refused by the patient. During two years potassium iodid and mercurials were administered without result. The upper nasal fossae were then found blocked by polypoid masses and hypertrophied and enlarged middle turbinates. Transillumination showed both frontal sinuses and anterior ethmoidal cells opaque. The polypoid tissue was removed with a snare and the middle turbinates were amputated. This was followed by a profuse creamy white discharge, which continued for many days in diminishing quantity. The operations were followed by prompt relief of the pain and insomnia and a steady subsidence of the swelling in both optic nerves. In a month the fields of vision were normal and in two months central vision rose to 6/5 in each eye, and a year after the operative interference the man remained well. The swelling of the pupils had entirely disappeared. In a third case the patient, a man, when first seen, was blind in the right eye from atrophy of the optic nerve, and vision was reduced to 1/10 (6/60) in the left from well-advanced atrophy. The field was contracted and fixation eccentric (central scotoma). The same nasal and sinus conditions were present as in the other cases, but amputation of the turbinates was not permitted. Large polypoid masses, however, were removed with the snare and the parts carefully irrigated for a month, during which vision in left eye rose to 6/20. The patient then went to Europe and placed himself under the care of Professor Pagenstecher. After an absence of six months he returned totally blind in both eyes and the upper nasal fossae again stuffed with a polypoid mass, and still suffering from frontal headache. A careful study of the patient by Dr. C. K. Mills failed to discover any focal symptom. Since these experiences I think it probable that some of the inexplicable cases of optic neuritis I have seen, and which have not proved amenable to treatment, may have belonged to this group of optic neuritis, due to sinus disease.—E.r.

636

Anatomic and Clinical Relations of the Sphenopalatine Ganglion to the Nose and Its Accessory Sinuses. G. SLUDER, *N. Y. Med. Jour.*, Aug. 14, 1909.

Meckel's ganglion is in quite as close relation to the nose and its accessory sinuses as is the optic nerve. It has long been recognized that inflammatory processes in the sphenoids, postethmoidal and maxillary sinuses extend to the optic nerve, and the fact has been demonstrated postmortem (Birsch-Hirschfeld). It is therefore altogether reasonable to assume, Sluder says, that these processes also pass over to Meckel's ganglion, although the clinical picture is very much less striking than the blindness produced by involvement of the optic nerve. According to his observations, characteristic disturbances have followed posteth-

moldal and sphenoidal suppurative inflammations which can not be explained otherwise than by assuming that Meckel's ganglion has become involved by extension; some of these disturbances have been transitory, and some have persisted for many years. In other cases the conviction has been equally positive that the extension has been from the nose proper. Thus far he has not seen anything that could be interpreted as an extension from the maxillary sinus. From the anatomic relations of Meckle's ganglion to the anterior boundary of the pterygopalatine fossa, i. e., to the posterior wall of the maxillary sinus, it is not very likely to be involved by extension of an inflammatory process from that sinus, inasmuch as the arteria palatina descends and the arteria sphenopalatina, together with their accompanying veins and the surrounding connective tissue, lie between the ganglion behind, and the wall of the maxillary sinus in front. This relation appears to be constant; and Sluder believes that it explains why clinical manifestations referable to the ganglion do not ordinarily follow inflammatory processes in the maxillary sinus.—*Ex.*

644

Operations for Suppurating Sinuses. CHARLES AUBREY BUCKLIN, *Arch f. Laryngol.*, Bd. 22, Heft 3, 1909.

SIMULTANEOUS OPENING OF THE ETHMOID AND FRONTAL SINUS.

Having discovered in the left nostril of a patient a large piece of exfoliated bone, recognized as being the entire wall separating the ethmoid from the frontal sinus, the author concluded that the wall between these sinuses had sloughed out, making one large sinus. The sinuses being drained by this common opening, the disease was cured by these changes. Therefore, the author concludes that to successfully operate upon the ethmoid and frontal sinuses, this suppuration process should be imitated. The instruments used should be Hartmann's forceps, or any modification the under jaw of which is a straight rod with a movable knife, jaw opening at the terminal extremity, upwards to an angle thereto.

Zuckerkindl states that in no single instance has the frontal sinus become involved without the inflammation extending from the adjoining sinuses, showing that suppuration in this vicinity usually originates in the ethmoidal sinus. So when these sinuses are united by a common outlet large enough to drain thoroughly the cures are permanent and without annoying complications. The author concludes that the sphenoidal chisel should be used when inflammatory thickening causes a dangerous strains to the tissues, due to the force necessary to enter the blade of the Hartmann's forceps into the ethmoid and frontal sinus. When operative measures fail the writer suggests the internal administration of potassium iodide, 10 drops, three times daily, increasing one drop a dose until 100 drops are taken. If within three months a cure is not effected, the radical external operation of Killian is resorted to, as it is the best external operation.

SPHENOIDAL SINUS SUPPURATION.

When it is necessary to operate upon the sphenoidal sinus the author recommends the use of the "sphenoidal chisel," which makes a certain,

successful, and rapid operation, free from all complications. With the chisel there is no blood to obscure the vision until after it has been properly placed, and the depth to which the chisel penetrates is controlled by a steel collar attached to the proximal end. The usual rule for placing this chisel correctly is to hold the blade of the chisel vertically, rest the rod on the floor of the nostril and pass it inwards in contact with the lower margin of the superior turbinate bone until it comes in contact with the posterior wall of the nasopharynx. The chisel will now enter the sphenoidal sinus without fall when driven into the proper distance. If the progress of suppuration is not satisfactory iodide of potassium should be administered for three months before any other operation is attempted.—Ed.

648

Treatment of Chronic Suppuration of Maxillary Antrum. J. DONELAN, *Lancet*, June 19, 1909.

Donelan says that the important thing in chronic antral suppuration is to operate as early as possible by a sufficient removal of the middle posterior part of the external nasal wall, and not to allow such cases to drift on to formation of nasal polypi and polypoid degeneration of the antral mucous membrane which may demand the much more severe and sometimes disfiguring radical operation.—Er.

652

On the Worth of the Electrical and Radiographical Illumination of the Frontal Cavity. A. ONODI, *Orvosi Hetilap*, No. 22, 1909.

Electrical illumination has only an illusory value, for its success depends on the thickness and construction of the bones. The Roentgen illumination possesses a greater but by no means absolute worth, since in some cases the findings may lead to wrong conclusions. An absolute value can be accorded to the Roentgen illumination in so far that by means of it it is possible to determine whether there are frontal cavities at all.—Ed.

656

Die Radikalooperation der Kieferhöhle von innen her. (The Radical Operation on the Antrum of Highmore From Within.) RETHI, *Wiener Med. Wochenschr.*, No. 1, 1909.

The author first described the method of opening the antrum of Highmore through the nose seven years ago.

The important point in this operation is to make a large opening into the antrum through the naso-antral wall. The lower turbinate and the lateral wall of the inferior and middle meatus is first thoroughly cocaineized and adrenalin applied, and then the anterior two-thirds of the inferior turbinate removed. An opening is then made with a chisel behind the anterior end of the turbinate and is enlarged with bone forceps up towards the middle meatus as well as in the inferior, so that a wide communication is made between the antrum of Highmore and the nose. The diseased mucous membrane and any granulations are then scraped out. The advantages of this method are as follows: The operation is

much simpler than the radical Caldwell-Luc operation through the canine fossa. It can be performed in a few minutes (four or five) after the cocaine and adrenalin have been applied.

The author emphasizes the necessity for removing enough of the inferior turbinate; taking off simply the anterior third is not sufficient. He also states that it is important to have the opening into the antrum extend to the middle meatus, and not confine it to the inferior. A small opening closes very rapidly and does not allow sufficient drainage. Almost all authors give the preference to the Caldwell operation through the canine fossa if conservative methods have not been effective. The operation through the nose is not followed by the severe pain that often goes with the Caldwell operation.

The criticisms that have been frequently made against the operation through the nose are, that the antral cavity cannot be thoroughly inspected after the operation, and that it is hard to reach with the curettes that is every part of it. This the author states is not a fact, if a large enough opening has been made. Small mirrors can be carried through the nasal opening into the antrum so that it can be inspected. The author believes in doing the radical operation in the first place in cases of chronic maxillary sinusitis, rather than to try palliative measures, such as a small opening through the inferior meatus. The operation through the canine fossa does not cure a larger percentage of the cases than the one through the nasal wall. Chiari states that in some chronic cases treated in this way he did not obtain a cure in a single case, that is, the discharge did not entirely stop. Out of fifty-eight cases operated on by the writer by his method, forty-nine were cured. That is, the discharge of pus has entirely stopped. Nine cases were improved, but not cured.—*E.r.*

658

A Modified Mikulicz Operation, Whereby the Entire Lower Turbinate is Saved in Intra-Nasal Operations on the Antrum of Highmore, With Presentation of a Patient. G. SLUDER.

Original contribution to *THE LARYNGOSCOPE*, p. 904, Dec., 1909.

660

Cyst of Epiglottis. J. C. BECK.

Original contribution to *THE LARYNGOSCOPE*, p. 704, Sept., 1909.

672

Case of Paralysis of the Left Vocal Cord Caused by Peritracheal Tumor. W. E. CHENERY.

Original contribution to *THE LARYNGOSCOPE*, p. 40, Jan., 1909.

682

Action of the Respiratory Muscles in the Production of Voice.

G. H. MAKUEN.

Original contribution to *THE LARYNGOSCOPE*, p. 671, Sept., 1909.

689

On the Various Affections of the Voice and Their Local Causation.
W. A. WELLS.

Original contribution to THE LARYNGOSCOPE, p. 189, March, 1909.

707

Anatomical and Anatomico-Pathological Researches on the Nervous Terminations of the Intrinsic Muscles of the Human Larynx. F. BRUNETTI, *Arch. ital. di Laringol.*, April, 1909.

Abstracted in THE LARYNGOSCOPE, p. 126, Feb., 1910.

708

Tuberculosis of the Larynx. E. H. CARY, *Med. Herald*, Feb., 1909.

Abstracted in THE LARYNGOSCOPE, p. 351, May, 1909.

710

Tuberculosis of the Larynx. W. E. CASSELBERRY, *Jour. A. M. A.*, Aug. 7, 1909.

Dr. Casselberry notes the common opinion of the formidable nature of laryngeal tuberculosis, and seeks to establish for this type of the disease, what is now well known in the pulmonary type, that in certain patients Nature develops an adequate resistance which, properly aided, may arrest the disease. In 24 out of 60 cases observed by him, the disease was of the hopeless non-resistant type. Twenty-two of the 60 patients had some elements of hopefulness in them, their natural resistance being sufficient to cause temporary amelioration and arrest, but not a permanent betterment, as a rule. Of this number, 8 are known to have succumbed in from 3 to 7 years, and twelve more are evidently doomed to follow the same course. Two, however, of this second group have now almost, if not quite, reached a state of permanent arrest of the disease, and one of these is reported. The third group is composed of 11 patients in whom the laryngeal lesions are or were in a state of arrest after a lapse of period varying from four to fourteen years. This does not mean that they are absolutely free from tuberculous disease, but that all progress in the laryngeal symptoms has ceased. Seven of these cases are detailed and 2 of them have been since reported on by another physician to the author. Several other cases are also reported in which death occurred from tuberculosis elsewhere, the laryngeal disease having practically ceased. The above cases show that the prognosis is not altogether bad and that, if the disease is early recognized and properly managed, we will have better results than heretofore. The treatment is described. Locally it consists in intralaryngeal surgical treatment by excision of circumscribed infiltrations and curettage of ulcerated areas. The use of galvanocautery deep punctures, local application of lactic acid and creosote or formalin. Casselberry does not advise external radical operation except under urgent conditions, but not in the presence of advanced pulmonary disease. Mentholated emollient spray is, within limits, a sedative to cough and pain, and suited for home use. Cocain and orthoform combined are effective also to some extent. Systemic treatment with tuberculin by the opsonic method has seemed

to him helpful, and in the resistant types the three cardinal principles of open-air life, rest, and forced feeding are more imperatively demanded than in ordinary tuberculosis. Rest to the voice is essential and business dictation and even social conversations must be interdicted. The advantages of climatic treatment must also not be overlooked. Casselberry concludes with the statement that simple tuberculous hyperlasia has not infrequently undergone resolution, and even tuberculous ulcers have occasionally healed. Partial improvement of the patient's condition has also been observed, and the effects of treatment under observation enables us to differentiate the cases in which a hopeful resistance can be looked for. In like manner the non-resistant cases can be recognized and the patients guarded from privation and hardship of travel and useless surgical intervention.—*Ex.*

713

Early Diagnosis of Malignant Disease of the Larynx. W. F. CHAPPEL, N. Y. *Med. Record*, Oct., 16, 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 189, Feb., 1910.

715

A Case of Primary Lupus of Larynx and Secondary Lupus of Skin. J. COHN, *Ztsch. f. Laryngol., Rhinol. u. ihre Grenzgebiete*, Bd. II, 1909.
Up to the present, according to Cohn, there have been published 29 cases of primary lupus of larynx. Cohn gives the history of another case: The lupus of a 17-year-old patient suffering from hereditary tuberculosis, confined itself at first to the epiglottis. Amputation of the epiglottis. Cure. Lungs normal. Half a year later lupus of right ear-lap. Progress of the lupus process in inside of larynx, lupous nests in the frontal palatal arches. Final result still unknown.—*Ed.*

716

Eruptive Conditions of the Nose and Throat: Their Consideration from the Point of View of the Laryngologist. F. COHN.
Original contribution to *THE LARYNGOSCOPE*, p. 208, March, 1909.

718

The Larynx in Tone Production. T. A. DAVIES, *Can. Lancet*, July, 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 631, Aug., 1909.

719

A Further Study of Laryngeal Neoplasms in America. J. L. DAVIS.
Original contribution to *THE LARYNGOSCOPE*, p. 28, Jan., 1909.

721

Chronic Stenosis of the Larynx Cured by Dilatation. D. B. DONOVAN.
Original contribution to *THE LARYNGOSCOPE*, p. 423, June, 1909.

728

Tuberculosis of the Larynx. G. FETTEROLF, *Med. Record*, Jan. 23, 1909.
Fetterolf urges examination of the larynx in every case of actual or suspected pulmonary tuberculosis. This would save much suffering and many lives. Discussing changes in the voice, he remarks on a symp-

tom noted by him in a few cases during conversation, which consists of a slight rotation and twisting of the head toward the position found in torticollis. This is usually associated with a cicatrized and arrested tuberculous lesion of the voice-producing apparatus. It must not be forgotten, however, that while the patient is tuberculous the laryngeal lesion may be due to syphilis, hysteria, general asthenia, or may result from mechanical interference with the inferior and external laryngeal nerves. Cough need not necessarily be present with laryngeal tuberculosis. As a practical working basis it can be assumed that if the cough is harsh, "throaty" in quality, and unproductive or out of proportion to the amount of sputum, there is present more or less laryngeal irritation at the door of which can be laid some of the responsibility. Should there be present large infiltrations of the arytenoids the patient will have a characteristic tubular, indescribable quality to the voice which is almost pathognomonic. Not much that is significant can be gathered from the sputum, but attention should at once be directed to the larynx on the following history: The patient awakes with a feeling of fullness and dryness in the throat, associated with huskiness or some degree of aphonia. On arising, coughing begins, and is frequently associated with retching, or even vomiting, continuing until there is ejected a discoidal mass of inspissated mucopus, dark, hard, and dry on one side, and yellow, green, sometimes moist on the other. The presence of blood in the sputum can but rarely be attributed to the larynx. Pain is the most serious symptom, and it is probably due to this that the laity regard "throat consumption" as such a terrible disease. When it occurs during deglutition advanced disease of the epiglottis is probably present. Dysphagia is rarely present, unless associated with pain in swallowing. Dyspnea may occur early or late. The symptoms enumerated are considered by the author only in their relation to the larynx, but the tonsils, pharynx, etc., should receive proper consideration. Moreover, the symptoms are elicited from the patient, not from the disease, so that his personal equation must form part of their valuation. —*Ex.*

734

Lipoma of the Larynx. M. A. GOLDSTEIN.

Original contribution to THE LARYNGOSCOPE, p. 641, Sept., 1909.

747

Laryngostomy in Perichondritis of the Larynx. A. IWANOW, Jeshemesjatschnik, p. 73, 1909.

Dr. Iwanow treated eight cases of perichondrial contraction by laryngostomy, whereby he discovered that the tissue in perichondrial diseases does not meet down through the insertion of caoutchouc tubes. It must be cut out, first of all. The pieces of tissue cut out ought to be cuneiform. As a means of dilatation, Dr. Iwanow uses rubber tubes, which are attached with Marly as a plastic; nasal septum cartilage was used in one case. Laryngostomy ought not to be postponed, as Sargnon and Barlatier advise, until the inflammation disappears, but be performed as soon as possible.

In four cases the natural respiration was restored, three cases are still under treatment. One patient died. The treatment is tedious and laborious and lasts a year or more.—Ed.

748

Clinical Diagnosis and Operative Procedure in Intralaryngeal Carcinoma

From the Standpoint of the Laryngologist C. JACKSON.

Original contribution to THE LARYNGOSCOPE, p. 581, Aug., 1909.

750

Zur Therapie der Kehlkopftuberkulose mit besonderer Berücksichtigung der Sonnenlichtbehandlung. Ein neuer praktischer Sonnenspiegel.

(The Treatment of Laryngeal Tuberculosis by Means of Sunlight—A New Mirror.)

THEODOR JANSSEN, *Deutsche Med. Wchnschr.*, May 13, 1909.

Sunlight is reflected from a movable mirror into the patient's mouth. The patient holds the laryngeal mirror himself and guides it by the view of his own larynx in the reflecting mirror.

YANKAUER.

764

Edema of the Larynx Following an Infection of the Lower Pharynx.

M. D. LEDERMAN.

Original contribution to THE LARYNGOSCOPE, p. 362, May, 1909.

766

Laryngeal Tuberculosis. R. LEVY, *N. Y. Med. Jour.*, Sept. 11, 1909.

Levy summarizes his paper as follows:

1. Pathologic conditions of the laryngeal mucosa, especially chronic catarrhal laryngitis, are important factors in the etiology of tuberculosis of the larynx.

2. Pain is not always present in laryngeal tuberculosis. When present it is not always conclusive that the lesion is tuberculous. It may exist without ulceration.

3. The beneficial effect of mercurial treatment in laryngeal lesions of tuberculous patients should not be accepted as positive proof of the value of this treatment in tuberculosis. It must be recognized that the differential diagnosis between syphilis and tuberculosis of the larynx is at times extremely difficult, especially when the former exists in tuberculous patients.

4. Bacteriologic confirmation of the diagnosis is often obtainable by examination of smears made directly from the laryngeal lesion.

5. It is necessary to again impress on the general profession the curability of laryngeal tuberculosis. It is especially important that the prognosis be determined by a careful study of the lesion in all its characteristics.

6. Local treatment to be effective must be well selected both as to time of applications and method of procedure.—Ex.

771

Stenosis of the Larynx Cured by Intubation. E. MAYER, *Med. Record*, Dec. 25, 1909.

The three cases of laryngeal stenosis reported by Mayer were all due to different causes. The first was due to a gunshot wound, comminuting the thyroid cartilage; the second was a post-thyroid perichondritis, and the third was a recurrent granuloma of the larynx. The cases are of special interest, first, because of their unusual nature, and, second, because of the satisfactory results following intubation. —*Ex.*

778

Paralysis of the Left Laryngeal Nerve in Mitral Affections. W. OSLER, *Montreal Med. Jour.*, Feb., 1909.

Osler has encountered three cases of laryngeal paralysis in the course of a mitral affection, and relates the details. The symptoms suggested the presence of an aneurism; in one case the stretch of the recurrent nerve compressed between the wall of the auricle and the aorta was whiter and more opaque than the rest of the nerve. —*Ex.*

791

Laryngeal Paralysis as an Early Indication of a Systemic Disease. G. T. ROSS, *Arch. internat. de Laryngol. d'Otol. et de Rhinol.*; Sept., 1909, and *Ann. of Otol., Rhinol. and Laryngol.*, Sept., 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 188, Feb., 1910.

797

Troubles larynges et respiratoires et cardiophrenoptose. (Respiratory Disturbances with Ptosis of Heart and Diaphragm.) G. SCHERB, *Presse Med.*, Sept. 4, 1909.

Scherb describes a case of movable heart with ptosis of the heart, diaphragm, liver and intestines, associated with phobias and obsessions involving the organs required for the patient's livelihood. The patient was a man of 53, a professional cathedral chorister, with an unusually powerful bass voice. In his singing he had evidently overstrained the respiratory organs, and about six years ago he suddenly felt intense pain in the region of the heart, and lost his voice with other symptoms of extreme ptosis of the diaphragm and heart. The sensations induced by the movability of the heart he interpreted in almost delirious fashion, resulting in an obsession of respiration and phobia of inspiration. The case shows the importance of seeking for some organic defect or displacement in every case of pathologic emotional disturbances. The importance of ptosis of the viscera in the pathogenesis of intermittent states of disturbance in the emotional sphere and will power is becoming recognized more and more. In this case, the explanation for the respiratory neurosis was found in the ptosis of the heart and diaphragm, this assumption being confirmed by the results of wearing a supporting band to hold the organs in their proper place. This put an end to the disturbing ptosis and the neurosis, and restored the chorister to the choir. —*Ex.*

806**Multiple Papilloma of the Larynx in Children.** H. SMITH.Original contribution to *THE LARYNGOSCOPE*, p. 81, Feb., 1909.**814****Report of Cases Illustrating Our Progress in Surgical Treatment of Chronic Stenosis of the Larynx and Trachea.** J. R. WINSLOW.Original contribution to *THE LARYNGOSCOPE*, p. 773, Oct., 1909.**815****Papillomata of the Larynx.** D. J. GIBB WISHART, *Can. Practit. and Rev.*, Sept., 1909.

The history of a child of under four years where only partial relief was obtained after three intubations, one tracheotomy, and two thyroidec-tomies during twenty-two months. The general health of the child has not permitted further attempts at complete removal. WISHART.

816**Microscopical Diagnosis of the Intralaryngeal Growths from a Practical Standpoint.** J. WRIGHT.Original contribution to *THE LARYNGOSCOPE*, p. 592, Aug., 1902, and *N. Y. Med. Jour.*, July 17, 1909.**817****Report of a Case of Foreign Body in Respiratory Tract.** J. F. BARNHILL, *Indianapolis Med. Jour.*, March, 1909.

Dr. Barnhill reports on cases in which pins and safety-pins lodged in the larynx. One report concerns a thirteen-year-old child, the others are reports of women who put pins in their mouths while dressing and swallowed them. Generally the pin lodged above the vocal cords, only in one case was it partly above and partly below. The point had invariably penetrated deep into the tissue, once into the ventricle, and once into the subglottic mucous membrane. All pins were removed by the direct method. One safety-pin worked itself into the ventricle and had to be removed by means of high tracheotomy.

Dr. Barnhill also reports on the penetration of a grain of corn into the right bronchus of a child; the foreign body was removed by means of a Jackson instrument. All cases recovered. —ED.

819**Foreign Body (Toy Incandescent Lamp) in the Left Bronchus.** J. C. BECK.Original contribution to *THE LARYNGOSCOPE*, p. 299, April, 1909.**824****Removal of Foreign Bodies by Means of Bronchoscopy.** H. BURGER, *Nederl. Tijdschr. v. Geneesk.*, Bd. 1, p. 671, 1909.

Case 1. Report of a man, thirty-four years old, who swallowed a silver coin which he had been carrying in his pocket a long time. Little inconvenience followed. High bronchoscopy without narcosis. Coin taken from lower part of bronchial trunk, but slipped. At the third attempt

the coin was placed in the trachea sagittal and got out. No bad effects. Recovery.

Case 2. A piece of tracheal cannula which a man had worn one and a half years, breaks off and falls into his respiratory tract. During the several hours in which two doctors attempt extraction through the trachea, the foreign body slides down further. In the evening the man comes to the clinic. By low bronchoscopy the body is found and easily taken out. After two days diffused bronchitis develops, then pneumonia; on the fifth day the patient suffers from dyspnea. The region shows a dilated hemorrhage tracheo-bronchitis of both sides and broncho-pneumonia in the lower lobes of the lungs. —Ed.

825

The Importance of Bronchoscopy in Internal Medicine. A. EPHRAIM, *Berl. Klin. Wchnschr.*, Oct. 25, 1909.

Ephraim points out that the condition of the bronchi as seen with the bronchoscope does not always agree with that indicated by the auscultatory signs. On the one hand frequently in chronic catarrhs in which not only crepitant but subcrepitant rales are present the bronchoscopic condition is normal and we are obliged to locate the trouble in the smallest bronchial twigs, instead of in the medium sized or large bronchi as indicated by the auscultation; while on the other hand sometimes bronchoscopy reveals doubtful bronchitis when the most careful auscultation fails to reveal its presence. He then passes to the recognition of anomalies of form of the bronchi and of diseases, such as syphilis of the bronchi, tumors, and diseases of the bronchial glands. —Ed.

830

Practicality of Bronchoscopy and Esophagoscopy. T. H. HALSTED.

Original contribution to *THE LARYNGOSCOPE*, p. 519, July, 1909.

832

Bronchoscopy and Esophagoscopy. The Technic Utility and Dangers.

E. F. INGALS.

Original contribution to *THE LARYNGOSCOPE*, p. 495, July, 1909, and *Ann. of Otol., Rhinol. and Laryngol.*, March, 1909.

842

Low Bronchoscopy for the Removal of Foreign Bodies in the Lungs.

V. UCHERMANN, *Norsk. Mag. for Lægevidenskaben*, March, 1909.

Dr. Uchermann relates the removal of a burned coffee bean from the left bronchus by means of an especially constructed apparatus. —Ed.

844

A Case of Primary Carcinoma of the Trachea. T. P. BERENS, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

The patient suffered from cough and dyspnea. Examination revealed both vocal cords reddened and slightly thickened. Beginning at the second ring of the trachea was a grayish-pink velvet-appearing mass, which occupied all sides of the trachea, and diminished its lumen to about one-third of its natural size. The mass was higher and thicker on the

right side, and apparently faded into what appeared to be thickened mucous membrane on the left side, where the third tracheal ring was visible. Owing to its extension so deeply down the trachea, exsection of the latter appeared out of the question; so that an attempt was made to remove the mass by means of a sharp bone curette, and apparently, the attempt was largely successful, for the result of the curettage left normal-appearing tissue. The growth was not adherent to the rings and did not extend beyond the limits of the trachea. A large and long tracheotomy tube was inserted and the wound stitched. Although the operation consumed less than an hour, and the loss of blood was insignificant, the patient suffered considerable from shock. He developed pulmonary edema and died of heart failure three weeks after the operation. Post mortem examination was not allowed. SCHEPPEGRELL.

848

Tumor of the Trachea Cured by Radiotherapy. HART and JUGEAS, *Soc. de Radiol.*, May 11, 1909.

Dr. Guisez made the diagnosis by bronchoscopy. During the two months that the front and back thorax wall was treated with the rays weekly, the functional symptom entirely disappeared. An examination showed the presence of a cicatricial surface. The treatment has been continued for the last ten months. —ED.

851

Further Report of a Case of Tracheal Scleroma. E. MAYER, *Am. Jour. of Med. Sci.*, Feb., 1909.

Abstracted in THE LARYNGOSCOPE, p. 149, Feb., 1910.

854

On So-called "Multiple Osteomata" of the Tracheal Mucous Membrane. H. S. MUCKLESTON.

Original contribution to THE LARYNGOSCOPE, p. 881, Dec., 1909.

863

Stenosis of the Esophagus. J. M. BELL, *Med. Fortnightly*, May 10, 1909.

Abstracted in THE LARYNGOSCOPE, p. 603, Aug., 1909.

865

Clinical Remarks on Esophagoscopy. BOTLEY, *Arch. de Rinol.*, No. 156.

Case 1. Buckle in the pectoral part of the esophagus in a child of fourteen months. Death. A physician blindly attempted extraction. Eight days later Botley, in making an esophagoscopy, could push the instrument to the cardia without finding the foreign body. Nevertheless, at the moment when the instrument passed the sternal region he believed he felt a resistance. Radioscopy showed that the foreign body was still present. Botley desired to make a new esophagoscopy, but the child got the fever (39°) and emphysema of the throat. Death because of weakness of heart.

Case 2. Bone at mouth of esophagus. Extraction by means of hypopharyngoscopy.—ED.

869

Perforation of the Esophagus. M. CLERET, *Arch. Gen. de Med.*, April, 1909.

In the case described, a cancer of the esophagus was unsuspected until perforation occurred. The eccentric rather than the concentric development of the lesion prevented disturbances in the passage of the food into the stomach. The patient was a man of 45 with a history of early syphilis and excessive use of liquor, but robust until recently, when symptoms of dyspepsia disturbed him for a time, recurring twice. After an interval of three months of freedom from symptoms, the pain in the right hypochondrium returned, with anorexia and rapid emaciation, and the perforation in the esophagus revealed the malignant nature of the trouble. —*Ex.*

874

Broncho-esophagoscopy in Diagnosis of Aneurism of the Aorta. GUISEZ, *Arch. des Mal. du Cœur, etc.*, April 11, 1909.

Guisez gives a number of illustrations to show how an otherwise latent aneurism may compress the trachea or esophagus and induce disturbances, the cause of which can be revealed only by direct visual inspection, disclosing the bulging of the wall into the lumen from the encroachment of the aneurism. He also reports the details of eight cases in which this syndrome was observed, and warns that aneurism of the aorta should be suspected whenever no other cause can be discovered for respiratory or esophageal disturbances. —*Ex.*

876

Corps étrangers et faux corps étrangers de l'esophage et des bronches. (Foreign Bodies in the Esophagus or Bronchi.) GUISEZ. *Presse Med.*, Aug. 14, 1909.

Guisez has had 42 cases of this kind in the last five years and here gives illustrations of the instruments which he has found most useful. He comments on the remarkable tolerance of the esophagus for foreign bodies; in one case a 10 centime piece was removed that had been in the esophagus for four years without causing much disturbance. The foreign body may pass on, but pain in swallowing may persist for sometime afterward. In 19 cases of foreign body in the esophagus Roentgen-ray examination gave positive results in only 10 cases. In 3 cases the dyspnea, cough and attacks of suffocation seemed to indicate that the foreign body was in the air passages. Even radiography may prove deceptive as the foreign body is found later in the esophagus. In 2 cases Guisez was able to remove a scrap of bone which had caused symptoms diagnosed as due to pulmonary tuberculosis, but all subsiding after removal of the foreign body. There is only one way to be sure as to the presence and nature of the foreign body, and that is by direct visual inspection, broncho-esophagoscopy. —*Ex.*

880

Esophagoscopic and Clinical Study of Tuberculosis of the Esophagus.

GUISEZ and ABRAND, *Revue de Chirurgie*, July, 1909

Only four cases of this disease had formerly been published. The writers record two cases which came under their observation. In one

case the esophageal affection was secondary to tuberculosis of the bronchial glands, in the other case the disease was primary in the wall of the esophagus. Esophagoscopy was practiced in both cases and whereas in the first case only rounded projections of the mucous membrane, corresponding to the enlarged bronchial glands, were visible, in the second case a definite tuberculous ulcer with a greyish colored floor surrounded by a zone of hyperemia was plainly seen. A fatal issue from pulmonary tuberculosis took place in both cases.

The writer believes that the disease is not so rare as the paucity of recorded cases would lead one to suppose.—*Ex.*

884

The Removal of a Spoon from the Esophagus of a Tabetic Woman by Means of External Esophagoscopy. JABOULAY and CREMIEUX, *Lyon Méd.*, March 28, 1909.

During a gastric crisis the patient attempted to tickle her pharynx with a coffee spoon in order to produce vomiting, whereby the spoon slipped down, due perhaps to the diminishing of the reflexes by tabes. External esophagoscopy was performed, since in the opinion of the doctors it would have been impossible to remove the foreign body in the natural way because its rigidity would have prohibited it from passing the curvature of the pharyngeal margin of the esophagus.—*Ed.*

887

Erkrankungen der Speiseröhre. (Affections of the Esophagus.) R. KAUFMAN and R. KIENBOCK, *Wiener Kl. Wchnschr.*, Sept. 23, 1909.

In this communication from Kienböck's radiologic institute at Vienna, 13 cases of an affection of the esophagus are reported with the autopsy findings in some and the lessons learned therefrom. In some cases a primary diverticulum induced secondarily spastic closure of the cardia. In others a large diverticulum existed, but the periodical recurrence of the disturbances in swallowing showed that the diverticulum was not directly responsible for them. It is evident that the decomposition of the food lodged in the diverticulum irritated the mucosa and thus was the indirect cause of closure of the cardia. In some cases of idiopathic dilatation of the esophagus the rinsing out of the esophagus did not banish all the disturbances, especially the spasm, until it was supplemented by administration of atropin. When the rinsing out of the esophagus cures in such cases, the vagus is manifestly not responsible for the disturbances; a local pathologic condition of the mucosa of the esophagus is inducing the spasm. On the other hand, when there are signs of a neuritis or neurosis of the vagus, or compression or atrophy of this nerve, this alone suffices to explain the spasm, contraction or paralysis interfering with the act of swallowing, and atropin will benefit and possibly cure.—*Ex.*

888

Report of a Case of Deep Cervical Abscess from Stricture of the Esophagus, and Report of a Case of Purpura Hemorrhagica With Abscess of the Deep Cervical Lymphatics. J. J. KYLE.

Original contribution to *THE LARYNGOSCOPE*, p. 620, Aug., 1909.

894

Cicatricial Strictures. W. LERCHE, *N. W. Lancet*, Feb. 1, 1909.

Lerche discusses the causation, pathology, symptoms and diagnosis of cicatricial stricture and describes the case of a boy three years old who had a severe cicatricial stricture from sucking lye. The child was reduced to skin and bone, and death was imminent. As not even liquid could be swallowed and enemata were the only means of nutriment, he describes the method in which he succeeded in getting a filiform whale-bone bougie into the tight stricture by filling a bent glass tube covered with rubber tube with as many of the bougies as would permit an easy gliding in and out of the instrument and passing the rubber covered glass tube down to the obstruction. A little manipulation enabled him to pass one of the filiforms through the first stricture. A second and subsequently a third stricture was penetrated in like manner after some dilatation of the one above it had been effected. Finally he devised a new esophagotome with blades of different sizes and incised the strictures through the esophagoscope. The child recovered and is in excellent health. The method of using filiform whalebone bougies is particularly suitable to valvular and ring strictures. Lerche emphasizes the fact that the cutting of strictures must be done under the guidance of the eye. —E.R.

896

Fremdkörper in den oberen Luft-und Speisewegen mit besonderer Berücksichtigung der Esophagotomie. (Foreign Bodies in Upper Air Passages and Esophagus). MARSCHIK, H. and VOGEL, R., *Wiener Klin. Wchnschr.*, Oct. 14, 1909.

In this report from von Eiselsberg's clinic the advantages of prompt tracheotomy are extolled as liable to give better results, in the hands of the general practitioner, than tedious attempts at extraction by the natural route with the inevitable injury from them and the bleeding. Some instructive skiagraphs are given and the point emphasized that a foreign body in the esophagus generally entails the same dangers as an incarcerated hernia. If extraction is not promptly successful, an operation should follow without delay. In 11 cases reported in detail, the outcome was favorable in 9, recovery taking place in from two to seven weeks. One child who had swallowed a coin succumbed to pneumonia a week after the esophagotomy. The other fatality was in the case of a man of 41 who had swallowed two false teeth set on a plate. After attempts at extraction with fingers and induced vomiting had failed, a physician tried to push the set down into the stomach and apparently succeeded, as a sponge held in a coin catcher was passed through into the stomach and the patient was able to eat bread and potatoes, the stomach tube could be introduced without effort and Roentgen screen examination was constantly negative, but the patient complained of pain in the chest and a hard sound introduced encountered an obstacle, although the soft stomach sound passed readily into the stomach. Esophagotomy over a week after the teeth had been swallowed finally resulted in their removal, but in loosening the impacted teeth the wall of the esophagus was perforated, and septic pleurisy followed, which was soon fatal. The practice at the clinic is to in-

roduce a sound and examine with the esophagoscope and try to remove the foreign body if known to be round and not firmly fixed. But if the case is old and the foreign body has pointed edges or is firmly impacted, esophagotomy is done at once for fear of digging a groove in the wall of the organ as the article is drawn out. The food after the operation is given through a bougie and nothing but milk and tea by the tablespoonful is allowed for the first two days. The third day the bougie is removed and the tampon in the second week, and healing is usually complete by the end of the third week. —*Ex.*

899

Three Esophageal Cases. H. P. MOSHER.

Original contribution to *THE LARYNGOSCOPE*, p. 753, Oct., 1909.

906

Ausgedehntes Medullarsarkom des Esophagus (Sarcoma of the Esophagus. RIEKE, *Virchow's Arch.*, Dec., 1909.

Rieke reports a case of extensive sarcoma of the esophagus, causing no symptoms, except the inexplicable slow decline, the patient dying of intercurrent pneumonia. He also tabulates the details of twenty-nine other cases of sarcoma of the esophagus in the accessible literature. In all the other cases there was more or less pain, with signs of stenosis, but in the case reported the large tumor was unusually soft, and there was no breaking down of tissue; the surface was thus left smooth and yielding, and there was no interference with the passage of food, although two-thirds of the esophagus was occupied by the knobby tumor, entirely encircling it, but with no involvement of the environment. —*Ed.*

909

Über die Anfänge einer "endographischen" Untersuchungsmethode von Magen, Darm, und Speiseröhre. (Endographic Examination of Esophagus, Stomach and Intestines.) H. SCHADE, *Berliner Klin. Wchnschr.*, Oct. 4, 1909.

In the preliminary communication Schade describes his application to clinical diagnosis of the principle of introducing an inflatable bag into the organ to be examined, and determination of the condition of the walls of the organ by the chemical reactions noted on the surface of the inflatable bag. He calls the method "endography," and uses for the purpose a rubber bag coated before vulcanization with a thick layer of rice starch; this acts like a reagent paper in contact with abnormal secretions and tissues. A smaller tube is enclosed in the stomach tube, the lower end of the smaller tube terminating in a hollow olive. The reagent bag is fastened to the end of the inner tube, and is enclosed in a second very frail inflatable rubber bag, both being introduced collapsed into the stomach, being easily pushed along ahead of the outer stomach tube by the protruding olive of the inner tube. The outer bag ruptures when inflated to the outer tube, leaving the reagent bag free; when it is inflated its outer surface fits against the inner walls of the organ, and any ulcer, cancer or other lesion makes its imprint on the chemically prepared surface. The bag is then with-

drawn collapsed through the outer stomach tube left in position. Date the operation later of course if the case has confirmed in every instance the presence or absence of a gastric ulcer as indicated by this technic. —*Ex.*

911

Demonstration of a Foreign Body in the Esophagus Removed by Esophagoscopy. H. STOLTE, *Jour. Ophth. and Oto-Laryngol.*, March, 1909. Abstracted in *THE LARYNGOSCOPE*, p. 144, Feb., 1909.

920

Excision of the Larynx for Malignant Disease. J. BELL, *Ann. of Surg.*, July, 1909.

Dr. Bell reports 12 laryngectomies. In his experience partial operations on the larynx are not satisfactory. Excision of the larynx is a safe operative procedure. In 7 of the 12 cases operations were done for intrinsic, far-advanced cancer of the larynx; in 5 for primary disease of the organ. Of the 12 patients operated on, 7 recovered. —*Ex.*

926

Operative Procedure from the Standpoint of the General Surgeon. G. E. BREWER.

Original contribution to *THE LARYNGOSCOPE*, p. 601, Aug., 1909 and *Ann. of Surg.*, Nov., 1909.

930

On the Treatment of Cicatricial Stenosis of the Larynx by the Methods of O'Dwyer and Rogers. D. B. DELAVAN.

Original contribution to *THE LARYNGOSCOPE*, p. 865, Nov., 1909, and *Jour. of Laryngol., Rhinol. and Otol.*, Nov., 1909.

934

Laryngectomy, Specimen, Method of Artificial Voice Production. J. W. GLEITSMANN.

Original contribution to *THE LARYNGOSCOPE*, p. 291, April, 1909, *Jour. of Laryngol., Rhinol. and Otol.*, April, 1909, and *Rev. hebdomadaire de Laryngol. d'Otol. et de Rhinol.*, April 3, 1909.

935

Laryngotomy and Laryngectomy for Cancer. D. C. GREENE, *Boston Med. and Jour.*, Jan. 28, 1909.

Greene reviews the history and describes the technic of laryngotomy and laryngectomy, also the after treatment. The mortality can be kept at a low figure by attention to the following details:

1. A careful selection of cases.
2. Attention to the cleanliness of the mouth.
3. The avoidance of shock by (a) the use of atropin before operation; (b) local use of cocaine during operation; (c) the Trendelenburg position during the second stage.
4. The avoidance of inhalation pneumonia by (1) the Trendelenburg position during operation, and (2) rectal feeding and elevation of the foot of the bed after operation. —*Ex.*

939

Laryngeal Tuberculosis. L. J. HAMMOND, *Am. Medicine*, Feb., 1909.

Hammond discusses the symptoms, prognosis and treatment, and says that the indications for surgical treatment of the larynx are: (1) To relieve dyspnea and dysphagia; (2) to encourage healing of the ulcers by forced rest of the larynx; (3) to put the larynx in a condition to derive the greatest benefit from local treatment. The results of tracheotomy in his hands have been very encouraging, and he considers that this procedure should be recommended as a cure for laryngeal tuberculosis early in the disease, as soon as the classic symptoms are demonstrated, and for the relief of those in whom the disease is advanced beyond possible recovery.—*Ex.*

941

Suture of the Recurrent Laryngeal Nerve, With Report of a Case.

J. SHELTON HORSLEY, *Trans. of Southern Surg. and Gynecol. Ass'n*, Dec., 1909.

Dr. J. Shelton Horsley, of Richmond, Va., stated that after a thorough search of the literature he had been unable to find a report of any case in which the recurrent laryngeal nerve was sutured. There had been considerable experimental work done, chiefly by those interested in veterinary surgery, in which the left recurrent laryngeal was divided and implanted higher up into the vagus. Most of these experiments had resulted successfully, so far as restoring the function of the laryngeal muscles supplied by the left current nerve was concerned. He reported a case in which the left recurrent was injured by a bullet wound. The case was referred to him about three months after the injury. The patient was examined by a laryngologist, and all the muscles supplied by the left recurrent laryngeal were found completely paralyzed. An incision was made along the anterior border of the sternocleidomastoid muscle and the injured nerve was easily found in the groove between the esophagus and trachea. The diseased portion was excised, except a small filament consisting of the posterior part of the nerve sheath. The ends of the nerve were brought together with a single suture of No. 0 chromic catgut in a fine curved needle. Some muscle tissue was drawn over the sutured nerve. The wound healed by first intention and the patient left the hospital nine days after the operation, with no improvement in voice or in breathing at that time. The improvement was gradual, however, and two reports from a laryngologist were made after the operation. The first, about two months after the operation, showed improvement in the muscles, and the second report, fifteen months after the operation, stated that the laryngeal nerve had fully recovered.—*Ex.*

942

Broncoscopy and Esophagoscopy. C. JACKSON, *Jour. A. M. A.*, Sept. 25, 1909.

Dr. Jackson says that 105 deaths recorded in one paper in five years from foreign bodies in the throat or from ill-advised efforts for their removal, indicate the need of acquainting the medical public with the advances that have been and are still being made in bronchoscopy and

esophagoscopy. He reports cases illustrating the dangers of the existing ignorance; in one case a penny had lodged in the esophagus and the patient succumbed to inflammation due to blind probing without the use of the esophagoscope. In another a prominent surgeon did a rapidly fatal thoracotomy for a glass bead which at autopsy was found in the right bronchus. The operating surgeon, when his attention was called to this and the fact that it could have been easily removed by bronchoscopy, asked: "What is bronchoscopy?" Jackson has used esophagoscopy in 41 cases of foreign bodies in the gullet and in all but one the intruder was removed. The exception was a bent sharp-pointed tack which had penetrated the tissues and could not be removed by any degree of traction that was considered safe, but later passed into the pleural sac, causing abscess, and was safely removed by thoracotomy. He has practiced tracheobronchoscopy on 32 patients for foreign bodies lodged below the glottic, only 4 of which were not removed. There were no deaths from any cause so long as the patients were observed. In over 300 cases of tube work he has had only 2 deaths, and these were from diseased conditions, not from instrumentation. If sufficient attention were given to learning it, tube work would be the safest of surgical procedures. In esophagoscopy in infants, Jackson uses no anesthetic; in adults it is useful, though not essential. Foreign bodies in the esophagus are as apt to cause dyspnea as those in the trachea. The blades of the forceps must not be closed except under guidance of the eye, and this requires a lessening, if not abolition, of the cough reflex. Jackson describes in detail his instruments and the technic of both operations; electric light is essential, but, like Ingals, he thinks the use of commercial circuits is unsafe with a tube that makes a moist contact with tissues in such close relations with the vagi. The article is illustrated.—*Ex.*

943

Laryngostomy. C. JACKSON.

Original contribution to THE LARYNGOSCOPE, p. 690, Sept., 1909.

944

Surgery of the Esophagus, Laryngologically Considered. C. JACKSON.

Original contribution to THE LARYNGOSCOPE, p. 743, Oct., 1909.

945

Tracheotomy. C. JACKSON.

Original contribution to THE LARYNGOSCOPE, p. 285, April, 1909.

946

Removal of a Foreign Body from the Left Bronchus by Bronchoscopy.

C. T. JACOBSEN, *Hospitalstidende*, No. 8, 1909.

Dr. Jacobson reports on the removal of a plum-stone from the left bronchus by means of bronchoscopy.—*Ed.*

947

Esophageal Surgery H. H. JANEWAY and N. W. GREEN, *Jour. A. M. A.*, December, 11, 1909.

The authors report their experimental work to develop the technic of operations for anastomosis between the stomach and the esophagus, for curcuiting the cardia and for resection of a portion of both the stomach and the esophagus. In their work they have used two methods of artificial respiration; the one by an inflation of the lungs by an intubation tube; the other by a positive pressure cabinet in which the head of the dog had been placed. They describe a method for combining the advantages of both these methods which contributes in a remarkable way to the speed and ease of the operation. They have operated during the past year on sixty-nine dogs, using the above method for artificial respiration and anesthesia. In the simple anastomosis without resection the technic is as follows: The eighth rib is first resected subperiosteally. The chest cavity is opened in the periosteal floor of the resected rib. The periosteal cavity is opened through the diaphragm, and the anterior wall of the stomach is drawn into the thoracic cavity. The stomach is opened, the female half of the button is introduced, and the opening closed by a purse string suture. The male half, which has been previously passed down the esophagus, is now separated from its carrier and supported for engaging with the female half. This button, which was designed by the authors especially for esophageal anastomosis and depends for its union on penetrating needles, is then pressed together. The circle of anastomosis is reinforced by a running suture. The portion of the tissue between the two halves of the button subsequently sloughs out and liberates the button. The opening of the diaphragm is closed by suturing this structure to the wall of the stomach. Closure of the chest completes the operation. For gastro-esophageal anastomosis with resection of part of the esophagus and stomach they find it an advantage to resect part of the seventh and eighth ribs, but to open the thoracic cavity in the periosteal floor of the seventh rib. The peritoneal cavity is opened behind and in front of the stomach. The gastrosplenic and gastrohepatic ligaments are now divided between double ligatures. This permits of the delivery of a large portion of the stomach into the thoracic cavity. The cardia is divided with the cautery knife between two clamps. "The esophageal stump is protected by clamping over it a gauze pad. Interrupted Lembert sutures are passed from the posterior wall over the clamp to the anterior wall of the stomach. The clamp is now removed, all bleeding stopped, and the female half of the button dropped into the cavity of the stomach. The interrupted sutures are now tied and closure of the stomach completed by continuous Lembert sutures. The esophagus is then amputated by the cautery between a purse-string suture and a clamp which is applied to the upper end of the segment to be removed. The free end of the esophagus is pushed into the cavity of the male half of the button, and the two halves are pushed together. The circle of union is reinforced by a running stitch. The stomach is then sewed to the opening in the diaphragm, and the chest wall closed." Speed, absolute asepsis, and the utmost minimizing of trauma are essential in this work, even more than in the abdomen,

and the authors have therefore utilized a button which gives better results than the suture method, though they hope to improve the suture method so as to dispense with the apparatus. In spite of all, their latest technic is not entirely satisfactory, but they have successfully accomplished four resections of the cardia and esophagus without resection. At present the operation of anastomosis of the esophagus without resection is not accompanied with any high mortality and they trust that further improvements of technic will reduce the mortality of the other operation also. The article is fully illustrated. —Ex.

948

Treatment of Laryngeal Tuberculosis by Means of Marmorek's Serum.

B. JERESLAW, *Berl. Klin. Wchnschr.*, No. 15, 1909, and *Deutsche Med. Wchnschr.*, April 15, 1909.

One case was cured, three considerably improved, five moderately and 3 slightly improved. YANKAUER.

950

Direct Laryngoscopy in Diagnosis and Treatment of Papillomata of the Larynx. R. H. JOHNSTON.

Original contribution to *THE LARYNGOSCOPE*, p. 861, Nov., 1909.

953

Removal of Laryngeal Tumors by Direct Laryngoscopy. R. H. JOHNSTON.

Original contribution to *THE LARYNGOSCOPE*, p. 237, March, 1909.

954

Removal of Laryngeal Tumor in the Left Lateral Position.

H. H. JOHNSTON.

Original contribution to *THE LARYNGOSCOPE*, p. 350, May, 1909.

958

Operative Treatment of Carcinoma of the Larynx. H. KOSCHIER, *Wiener*

Kl. Wchnschr., July 8, 1909.

Koschier tabulates the details of twenty-eight cases of cancer of the larynx in which he operated during the last ten years and reviews series published by others. In eighteen cases with an interval of over three years since the operation, eight of the patients are free from recurrence to date, including four out of five treated by laryngo-fissure; two out of ten treated by partial laryngectomy, and two out of three treated by the total operation. Scarcely more than a fourth of all the cases observed were operable, although incipient cancer in the larynx induces hoarseness for months, but the patients seldom consult a physician for this alone. On the other hand, some physicians overlooked the malignant disease and merely prescribed a gargle or treated the patient with a course of sprays for months. —Ex.

963

The Röntgen Examination of the Esophagus. S. LANGE, *N. Y. Med.*

Jour., Jan. 23, 1909.

Dr. Lange points out the advantages of the Röntgen examination in most instances; yet he shows that for nervous people or for those suf-

fering from heart disease it is often dangerous, causing mediastinal tumors. From a limited number of investigations Dr. Lange concludes that a narrowing of the lumen of the esophagus can be earlier determined by the Röntgen method than by any other.—*Ex.*

965

Amputation of the Epiglottis in Laryngeal Tuberculosis. LORENZO B. LOCKARD, *Ann. of Otolaryngol. and Rhinol.*, Dec., 1909.

The claims for this method are almost immediate relief of pain and the insignificant amount of postoperative inflammation and discomfort, unless there are accompanying conditions themselves provocative of pain. Even in these cases the suffering is greatly diminished. One naturally presupposes a prolonged period of odynophagia and dysphagia, but in practice it is found that the odynophagia almost immediately disappears, that there is little subsequent soreness, and that deglutition, previously difficult or entirely impossible, becomes at once almost normal. Lockard believes it can justly be claimed that by this operation we save a certain number of lives that otherwise would most certainly be sacrificed; that in the vast majority, when a cure is not to be thought of, we effectually conquer the pain, and that we succeed, even in those in whom the suffering is not entirely controlled, owing to the presence of complicating lesions, in diminishing it to a notable degree.

SCHPEPPEGRELL.

966

Esophagoscopy and Spasm of the Esophagus. A. MARTIN, *Revista barcelonesa de enfermedades de la garganta*, No. 15.

The author describes three cases of spasms where the clinic appearances pointed to malignancy. Esophagoscopy only, made the diagnosis certain.—*Ed.*

967

How Ought Coins be Removed From the Esophagus? F. MASSEI, *Ztschr. f. Laryngol., Rhinol. u. Ihre Grenzgeb.*, Bd. 1, p. 701, 1909.

Dr. Massei has successfully performed this operation more than one hundred times. He recommends the use of the too-little-known Kirmisson hook, which is less dangerous and more easily manipulated than the esophagoscope. If, however, the foreign body be sharp, the author strongly advises the use of the esophagoscope.—*Ed.*

969

Direct Intubation of the Larynx. H. P. MOSHER.

Original contribution to *THE LARYNGOSCOPE*, p. 790, Oct., 1909.

974

Treatment of Chronic Bronchitis. B. ROBINSON, *Am. Jour. of Med. Sci.*, Dec., 1909.

In chronic bronchitis, hygienic measures are of primary importance; good ventilation, plenty of air and sunshine are essential; so are good food and rest. Clothing suitable to the season, and well selected, is necessary. Apparel too heavy, which overheats the house and causes

perspiration, only brings on fresh colds and aggravates the chronic disease. Food should be simple, well prepared, and nutritious; but heavy meals, especially at dinner, must be interdicted. Strictest moderation in sweets and alcohol should be enjoined; and tobacco, as a rule, hurts notably, except in mild quality and very small quantity in the evening. As to medication: internally, the iodids are the most useful drugs when properly used. When there is dyspnea, even slight, or nervous irritability shown in any way, Robinson combines the iodid with Hoffman's anodyne. Hydriotic acid may be alternated advantageously with terpene hydrate in fairly large doses. Invariably counter irritation to the chest should be insisted on, and kept up for many days, or weeks, with occasional intermissions when the skin becomes tender. Nothing, says Robinson, equals the compound tincture of iodin for its resolute qualities, and the derivative effect toward the skin is all that is desirable.

Internally, Robinson is opposed to the use of sedatives or anodynes, unless imperatively required. The least objectionable are the combined bromids, henbane, or codein. A mercurial, followed by Rochelle or Epsom salts, is useful once a week or oftener, and diminishes cough and expectoration for a time in a pronounced degree. Vapor inhalations, especially of creosote, are very valuable when properly used, and if persisted in, are more curative than any other one thing, unless it be change of climate and, at times, habits and occupation. The inhalations should be used with the perforated zinc inhaler. Internally, creosote may also be given with the happiest effect, in small repeated doses, and, combined with the best whisky and glycerin, will rarely disagree with the patient.

These patients cannot, should not, be housed. If so, they soon become worse, and their bronchial mucous membrane will not bear the slightest change without increased cough and expectoration. If a change of climate may be indulged in, one should go, preferably, to the sand hills of Georgia in winter, and in summer to the Adirondacks, at a moderate elevation. If permanent banishment seems desirable, California, not too near the coast, Robinson believes, is the one place of best resort.—*Ex.*

975

Treatment of Stenosis of the Larynx With Laryngostomy and Dilatation.

G. RUGGI, *Semaine Med.*, Feb. 17, 1909.

Ruggi claims priority for this method and states that he has always cured his patients in from 38 to 63 days and without any tendency to gangrene or other disturbance. He lines the larynx with thin rubber tissue, packing the tube thus formed with gauze, as he describes in detail, reviewing his extensive experience since 1892.—*Ex.*

983

Dilatation of Stenosis of Larynx and Esophagus. C. SIEUR and PERIER,

Bull. de l'Acad. de Med., April 13, 1900.

Sieur's two patients were young soldiers requiring an emergency tracheotomy, the first for fracture of the larynx from the bite of a horse,

the other for phlegmasis of typhoid origin, with prolonged suppuration and necrosis of cartilage, which did not heal for eighteen months. The progressive dilation with red rubber drains after laryngostomy finally proved successful in each case. Success depends on going ahead very slowly after the subsidence of all inflammation; there is danger of bronchopneumonia if this rule is transgressed. He changes the drain every second day to insure its elasticity. It should reach from the upper part of the larynx, leaving the epiglottis free, down to the tracheotomy tube, its slanting lower end fitting between the top of the tube and the posterior wall of the trachea. Guisez and Delherm state that esophagoscopy revealed the absence of the assumed cancer in 18 patients out of 220 examinations made with the esophagoscope. The spasmodic constriction is seen like a narrow slit or in the shape of a deep funnel with a punctiform opening below which resists the passage of a sound. The aspect is so characteristic that it can never be taken for cancer when once seen. The diagnosis once established, the first indication is to introduce a sound to permit the patient to be fed, and then to dilate the constriction and by removing the obstacle allow the distended part of the esophagus above to regain its elasticity. Rinsing out the esophagus with a slightly alkaline fluid hastens the cure by attenuating the reflexes. They have thus cured eleven patients, including nine with great distention of the esophagus above the spasmodic constriction. The esophagoscope confirms the diagnosis and permits the introduction of a sound under direct inspection which otherwise it seems impossible to introduce. Perler comments that the introduction of a stiff tube is liable to do injury unless oversight of the conditions is obtained beforehand by radioscopic examination. —*Ex.*

984

Case of a Foreign Body in the Respiratory Tract. E. W. SIKEMEIER, *Nederl. Tijdschr. v. Geneeskunde*, Bd. I, p. 664, 1900.

Eight-year-old boy swallowed an acorn. Laryngoscopy nil. After a rather long interval in which absolutely no symptoms appeared, the boy had attacks of a peculiar short cough, without stridor or dyspnea. Nothing irregular in the thorax. In a few days a slight rise in temperature, which suggested incipient pneumonia. The next day definite proof that right main bronchus was closed. High bronchoscopy under local anesthesia was attempted. The throat was penciled with a 10 per cent cocaine solution. After ten minutes an attempt was made to introduce the bronchoscope through the mouth. Child was intensely nervous; had to be held by several nurses, and its mouth held open by means of a mouth gag. With great difficulty the instrument was introduced into the mouth, but even before it reached the larynx the child fell over almost comatose; its limbs were asleep, the cornea reflex deadened, the pupils narrow, breathing slow. Immediate tracheotomy, which entirely changed the condition of the lung, but the general condition became worse; the pulse did not improve upon the injection of spirits of camphor, penciling the respiratory tract was not productive of cough-reflex. Half an hour after the appearance of first symptom, death. Autopsy:

When the trachea was opened a little acorn jumped out so quickly that it could not be determined from which bronchus it came. Dr. Sikemeier holds that the sudden death was due perhaps to cocaine poisoning, rather than to the reflexes. —Ed.

988

Direct Esophagoscopy. A Unique Experience. H. TILLEY, *Lancet*, March 27, 1909.

A child, four days old, swallowed the nipple of a suckler. The child could no longer swallow. The foreign body was located and extracted by means of Brünig's Esophagoscope.—Ed.

998

Bronchoscopy and Esophagoscopy. D. J. GIBB WISHART, *Can. Lancet*, Feb. 1909.

After a brief outline of the development of these accessions to diagnosis, and the terms used, notes are given of five cases in which the writer had employed the methods of examination, etc., with the results obtained.

WISHART.

1001

Bacteriologic Diagnosis of Diphtheria. J. E. BLAKE, *L. I. Med. Jour.*, April, 1909.

Blake points out that we have become accustomed to depend on health departments for a bacteriologic diagnosis of diphtheria, and asks whether the report is not often enough incorrect to make us doubtful of its accuracy in any particular case. He reports ten cases in which negative reports were given, and yet the bacillus was subsequently found. He discusses the various possibilities—incompetence, carelessness, absence of bacilli in particular tubes, too few bacilli present to be found, especially in the presence of mixed infection—and discards them all. He concludes that the only explanation lies in a difference of methods of culture. He describes the methods used by the health department and by himself, respectively, and believes that if a double culture system were adopted, a negative report from a positive case of diphtheria would become an extreme rarity.—Ex.

1005

Diphtheria Carriers; With Suggestions for Control. H. E. CLUTTERBUCK, *Can. Lancet*, Aug., 1909.

The Klebs-Loeffler bacillus, the cause of diphtheria, occurs in different morphologic forms, some more virulent than others. The virulent type is most frequently found in the throat, while the less virulent forms are more frequently found in the nose. All forms of the organism may be found in the nose and throat of well people, or of people only slightly ill. It would be better, therefore, if we disregarded entirely the old clinical classification of sore throat and recognized only the bacteriologic method of diagnosis.

The transmission of the contagion is by contact. The infection does not generally travel far beyond the immediate neighborhood of the sick

person. At the end of three weeks a large proportion of the bacilli thrown out during an average case of diphtheria will either be dead or very much attenuated, and will be found chiefly on those articles which have been in direct contact with the patient's mouth. Diphtheria is not an air-borne disease. The following deductions may be made:

(1) Our greatest weapon is the Board of Health Laboratory. All means calculated to extend its usefulness should be eagerly sought.

(2) Among school children the physician should regard every case of sore throat as a case of diphtheria until he has, by the means at his disposal, proved it to be otherwise.

(3) When a case is found to be diphtheria it should be thoroughly and rigorously isolated.—*Ex.*

1006

Diphtheria "Carriers." M. SOLIS-COHEN, *Jour. A. M. A.*, Jan. 5, 1909.

Dr. Solis-Cohen believes that the latent and "carrier" cases are mostly responsible for the spread of diphtheria in cities where the usual precautions are taken as to notification, etc. He gives his own results in the examination of those who had come in contact with diphtheria and quotes those compiled by Graham-Smith which correspond fairly well with his own, which showed an average of over 60 per cent infected. The infected "contact" is, therefore, as great a menace to public health as the convalescent from actual diphtheria. He defines as "latent" diphtheria the condition in which positive cultures are found in persons showing some pathologic condition, local or general, unassociated with pseudomembrane. Some of those cases may possibly be only tonsillitis. The fact that non-virulent diphtheria-like bacilli are found in the mouths of healthy persons complicates the question, but Solis-Cohen thinks that health officials would be justified in demanding bacteriologic tests of those who had been in contact or inmates of the same house or institution with a diphtheria patient, and, if found infected, isolating them till the bacilli disappear. But, owing to the possibility of the organisms being non-virulent, inoculation tests should be made when requested on guinea-pigs, and restrictions removed if the animal survives. He has followed this plan in his practice and as the medical inspector, whenever possible, since September, 1906, with good results and relates a number of instances showing its utility.—*Ex.*

1009

Differentiation of Diphtheria Bacillus from Organisms Morphologically Similar. C. FISHER, *Arch. of Ophth.*, Nov., 1909.

As the result of much experimental work, Fisher concludes that the diphtheria bacillus cannot be identified accurately by its morphology and its cultural characters alone. True diphtheria bacilli always ferment dextrin within forty-eight hours and never saccharose. This reaction, however, is not distinctive of the virulent bacillus diphtheria, since it is also given by certain non-pathogenic organisms, having the same morphology. Out of 13 unselected races which fermented dextrin, 5 were totally avirulent. Since bacilli which fail to ferment dextrin are much more commonly encountered, the fermentation test would, in the

majority of cases, be conclusive. Practically, it is of little value on account of the necessity of obtaining the bacilli in absolutely pure culture. Animal inoculation is, at present, therefore, the only reliable practical method of identifying the diphtheria bacillus. To exclude the virulent diphtheroids, a guinea pig immunized with diphtheria antitoxin must be inoculated also. —*Ex.*

1010

Diphtheriegift und Röntgenstrahlen. (Diphtheria Toxin and Roentgen Rays.) H. GERHARTZ, *Berl. Klin. Wchnschr.*, Oct. 4, 1909.

Gerhartz reports from Senator's clinic at Berlin a series of experiments which seem to demonstrate that exposure to the Roentgen rays destroys the toxicity of the toxin both in the test-tube and in the animal body, whether the toxin is circulating in the blood stream or bound in the tissues. In every experiment the animals exposed to the rays survived hours longer than the controls after injection of several times the fatal dose. Animals injected with six times the fatal dose of toxin, exposed previously to the action of the rays, also showed much attenuated infection. —*Ex.*

1011

Diphtheritic Paralysis. A. H. GORDON, *Montreal Med. Jour.*, April, 1900.

A note upon two unusual cases. In the first deglutition was mainly affected, but with the assistance of the stomach tube recovery was brought about. In the second, where death ensued, the arms, legs, neck muscles, and finally the diaphragm, were successively involved. WISHART.

1019

Streptococcal Infection in Diphtheria. D. M. MATHIESON, *The Lancet*, Nov. 20, 1909.

Mathieson states that the frequent occurrence of isolated phenomena about the twelfth or thirteenth day of an attack of diphtheria was first called attention to by Sevestre and Martin. The phenomenon which they described consists of one or more of the following: 1. A cutaneous eruption (most frequently scarlatiniform, but in a few cases a simple erythema); 2, joint pains; 3, albuminuria; and, 4, general constitutional disturbance, more or less marked. Sevestre and Martin, and later Roux, suggested that the frequency with which these phenomena developed on or about the thirteenth day seemed to indicate that they were the symptom complex of a secondary disease, with an incubation period of thirteen days, the infection occurring at the time of invasion of the diphtheria. They further suggested that the cause was organismal and probably streptococcic, reasoning from the facts, 1, that they frequently found evidence of mixed infection in the bacteriological examination of the throats of these cases; and, 2, that they occasionally found similar symptoms developed in pure streptococcic infections of the throat. Antitoxin, they were inclined to believe, had the effect of lowering the resistance of the organism to the attacks of this secondary infection, just as suppuration is more liable to occur in a part poorly supplied with blood. Mathieson then reports his observations made in eighty consecutive cases of diphtheria admitted to the Infectious Disease Hos-

pital, Leith. A bacteriological examination of the throat of each case was made on admission and at intervals during the stay in hospital, and the clinical progress was recorded. In nine of the eighty cases a marked streptococcal infection of the throat was found at one time or other in the course of the disease. Out of these nine symptoms corresponding to those described by Sevestre and Martin developed about the thirteenth day in five patients. In the remaining seventy-one cases where no streptococcal infection of the throat was at any time found two patients showed epiphenomena about the thirteenth day. In other words, in fifty-five percent of the streptococcal cases "thirteenth day" symptoms developed; and these symptoms developed in 2.8 percent of the nonstreptococcal cases. These results, although they refer to only a limited number of cases, seem to suggest that there is some connection between the streptococcus infection and the "thirteenth day" phenomena.

—Ex.

1022

Cerebrospinal Fluid in Postdiphtheritic Paralysis. L. ROEMHELD, *Deutsche Med. Wchnschr.*, April 15, 1909.

Roemheld reports a case in which diphtheria in a merchant of 30 was followed by paralysis involving the muscles of accommodation, the palate and the legs. Cerebrospinal fluid contained an abnormal proportion of albumin which gradually subsided as the patient improved under treatment. In another case in a child the paralysis had subsided but the patient became an imbecile; the proportion of albumin in the fluid at 18 was exceptionally large. These findings suggest that prolonged postdiphtheritic paralysis may be the result of changes in the central nervous system as well as of a peripheral neuritis.—Ex.

1023

Hemorrhagic Diphtheria. J. D. ROLLESTON, *Med. Press and Circular*, Oct. 13, 1909.

According to Rolleston, cutaneous hemorrhages occurring during the early stages of diphtheria with or without hemorrhages from the mucous membranes and associated with other features of malignancy, occur in about 5 per cent of all cases. The severity of the diphtheria attack is usually due to neglect of treatment at an early stage, but is sometimes due to precocious malignancy (syphilis). Hemorrhagic diphtheria is confined to children. It is not affected by the season, sex or previous health. Reaction to antitoxin is delayed, and the usual sequelae of serotherapy are much less frequent in hemorrhagic than in milder forms of diphtheria. The mortality of hemorrhagic diphtheria is over 80 per cent. All the patients who recover suffer from extensive paralysis. Treatment should be large doses of antitoxin and frequent doses of adrenalin.—Ex.

1027

Diphtherie und Heilserum. (Antitoxin Treatment of Diphtheria).

P. SCHÖNHOLZER, *Corresp.-Bl. f. Schweizer Ärzte*, April 15, 1909.

Schönholzer has been assistant at Krönlein's clinic at Zürich for 28 years, 14 before the introduction of serotherapy of diphtheria and 14

since, and thinks that the present is thus an auspicious moment for reviewing the results of antitoxin treatment. The total number of cases was 3,322 and the mortality 800. The mortality has dropped from 39.7 per cent in the first period to 13.39 per cent of all cases in the antitoxin period, and, in the cases with operative treatment, from 66.16 per cent to 32.54 per cent, and in the medical cases from 14.24 to 6.82 per cent. He is inclined to believe that diphtheria nowadays is less malignant in nature, on the whole, than during the first period. —*Ex.*

1033

Diphtheria. E. E. WUTTKE, *Jour. of the Kans. Med. Society*, July, 1909.

A summary of 41 cases reported by Wuttke may be made as follows: In 13 cases there was a typical pseudomembrane. The bacilli were longer than in the non-membranous, averaging 3 microns on the 24-hour cultures; the cases ran a more severe course and were frequently followed by paralysis. Twenty-eight cases never exhibited membrane at any time. The bacilli in these non-membranous cases were smaller than those in the cases with membrane, running from 1 to 3 microns, most of them being about 1.5 microns long. These cases ran a milder course throughout, responded readily and in a characteristic manner to treatment by antitoxin, none developed paralysis. It would seem that in these cases the bacilli belonging to the short variety were not so virulent as the longer forms in the cases with membrane. One case followed a peritonsillar abscess after its spontaneous rupture. Two cases followed scarlet fever, with an interval of perfect health of four and seven weeks, respectively. One case was followed by an abscess due to staphylococci and streptococci, which was treated surgically. Paralytic sequelae were noted in 5 cases. In three of these there was a myocarditis. Antitoxin in doses of 4,000 units was administered to all patients as early as possible. In 2 advanced cases this dose was repeated twice. Recovery was complete and prompt in all cases. No local treatment was used in any case. Prophylactic doses of 1,000 units each were given to 54 individuals who had been exposed. None of these developed the disease. The only undesirable effect of the serum noted was an urticarial eruption in about 20 per cent of all cases, but most frequently in those cases in which only 1,000 units had been administered —*Ex.*

1052

Thyroidectomy and a Theory of Cancer Causation. W. S. Low, *The Lancet*, Oct. 16, 1909.

After years of careful observation of many cases of carcinoma and sarcoma in all stages, Stuart-Low has come to the conclusion, looking on the thyroid gland as the fly-wheel of body growth and metabolism, that this organ is very liable to overwork, that the body metabolism in this manner is liable to become over-driven, and that thus the thyroid may be a causative factor in the origin and continuation of malignant disease. Holding these views, he long had it in contemplation to perform more or less complete excision of the thyroid in inoperable carcinoma as the best means of eliminating or ameliorating a disturbing factor in the

diseased organism of the carcinoma. Five cases are reported in which this was done, and there seems to be no doubt that partial removal of the thyroid had an influence on these growths. It seems to have a deterrent effect on the rate of growth of the primary tumor; the secondary glands, too, seem to be favorably affected, as in these cases there was a softening change in the glands, and they were much less painful. In all cases the pain was quickly relieved. The patients, instead of losing weight, as they were doing before the operation, put on weight. Another thing noted in all these cases was a distinct slowing of the rate of the pulse. The second, third and fifth patients were operated on at a much earlier date than the first and fourth, and it would appear to be best to intervene as early as possible, not waiting until the patient is too low and weak.—*Ex.*

1053

Accidents and Complications in Goiter Operations. C. H. MAYO, N. W.

Lancet, Feb., 1909.

Mayo finds that hemorrhage, with its immediate and secondary consequences, is a serious accident. When secondary, it is usually from muscle inclusion in ligating the inferior thyroid artery. There were 4 deaths in 575 operations for diffuse or encapsulated adenomata, 2 occurring from pneumonia. Seven out of 19 deaths in 410 cases of hyperthyroidism occurred in the first 46 operations for this disease. In this condition the complications of degenerative conditions lead to hyperthyroidism after operation. Preparation, graduated operation, and better technic have reduced this mortality to 4 or 5 per cent. Preservation of the posterior gland capsule tends to preserve the recurrent laryngeal nerves, also the parathyroid bodies. The greatest danger of parathyroid injury is in secondary operations for goiter. Other serious conditions requiring operation which occur with marked Graves' disease may call for preparation or graduated operation as a preliminary procedure.—*Ex.*

1055

The Significance of the Parathyroid Gland. A. E. MELNIKOFF, Roussky

Vratch, Nov. 7, 1909.

Melnikoff finds that the parathyroid is a completely independent organ, not a part of the thyroid which has been arrested in its development. The parathyroid is a paired organ, and is never transformed into thyroid tissue. The removal of the entire parathyroid leads to the symptoms of tetany and to death. The removal of the thyroid leads to myxedema. In some animals (rabbits) the removal of the parathyroid leads to an acute cachexia. The functions of the organ in question are two-fold: An antitoxic function and a regulating function affecting the general metabolism. Animals can be saved from death by cachexia or by tetany, after the parathyroid has been removed by transplanting the organ from another animal of the same species. The parathyroid must unquestionably be left alone in operations for removal of the thyroid. Injections of a solution of calcium acetate produce a rapid improvement in animals suffering from tetany.—*Ex.*

1058

Calcified Goitre. M. PATEL, *Lyon Med.*, May 23, 1909.

The patient was a young woman of twenty-three with a retrosternal goitre, causing well-marked symptoms of respiratory disturbances. An intraglanular enucleation was made with difficulty.

On making a section, the typical aspect of thyroidean adenoma was recognized. In the middle of the tumor was found a spine of bony consistency, several centimetres in length, which, after decalcification, an histologic examination showed to be formed of dense fibrous tissue of parallel layers and without any trace of bony tissue. This report is in accord with the theory of Berard, who claims that bony tissue is never found in goitres, and that formations which present this appearance and consistency are only fibrous or calcareous degeneration.

SCHEPPEGRELL.

1059

The Topographic Anatomy of the Thyroid Gland. PETER POTTER, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

The thyroid gland is smaller, proportionately, in the adult than in the fetus and young child. The thyroid gland descends upon the vertebral column with the assumption of the erect position. There is an apparent descent of the thyroid gland upon the neck organs. The gland is lower on the thyroid and cricoid cartilages of the adult, but it is attached to the same rings of the trachea. This apparent descent may be due to the fact that the hyoid, thyroid and cricoid are telescoped upon each other in the fetus and young child, and thus brought closer to the fixed part of the thyroid gland. Some remains of the thyroglossal duct can be found in almost every case, and a pyramid is present in over three-fifths of all cases. The isthmus may be very small, but it is rarely entirely absent. Accessory muscle slips are to be found, which seem to be aberrant slips of the thyrohyoid or possibly of the stenothyroid. They do not appear to have any special function, but act in conjunction with the fascia to hold the gland in position.

SCHEPPEGRELL.

1063

Über 450 Kropfoperationen. (Operations for Goitre.) H. SCHLOFFER, *Med. Klinik.*, Sept. 19, 1909.

Schloffer has been able to learn the late results in 235 of 450 patients on whom he has operated for goiter during the last six years, and expects to hear from others. In 199 cases the patients report most gratifying results from the operative treatment, but in 28 the tumor has recurred, causing some disturbance, and in 32 without disturbances. Eight patients say the operation gave no relief. The operative mortality in the cases without suffocation was 1.6 per cent, but 5 of the 130 patients who had typical attacks of suffocation succumbed. —*Ex.*

1066

Relation of the Thyroid and Thyroidism to Toxemia of Pregnancy.

G. G. WARD, *Surg., Gynecol. and Obstetrics*, Dec., 1909.

The study of the relation of thyroidism to the toxemia of pregnancy in the light of some of the recent researches as to the nature and treat-

ment of Graves' disease is the basis of Ward's paper. He believes that the thyroid gland is in all probability concerned in promoting nitrogenous metabolism, because there is considerable evidence that it normally hypertrophies during pregnancy and plays an important part in the increased nitrogenous metabolic process incident to that state. He regards it as very probable that the toxemia of pregnancy is largely dependent on faulty metabolism, at least an insufficient metabolism is an accompaniment which greatly adds to the seriousness of the condition. Failure of the thyroid to hypertrophy during pregnancy is probably followed by insufficient metabolism, and may result in the various forms of toxemia of pregnancy. Graves' disease, by materially altering the quantity and quality of the thyroid secretion, has an important influence on metabolic processes; therefore if associated with pregnancy, owing to the increased metabolism incident to that state, it becomes a grave complication. When there is failure of the normal hypertrophy of the gland during pregnancy, and when there is a diseased thyroid, as in exophthalmic goiter, the administration of thyroid substance, by supplying the deficiency of the normal thyroid secretion and by diuretic action, may materially improve a faulty metabolism, and thus have a favorable influence on the manifestations of the toxemia of pregnancy. The use of a saline extract of thyroid proteids made from fresh normal human glands is much more efficient in rapidity and reliability of action than the sheep thyroids as ordinarily prepared; therefore much more satisfactory results may be expected from its use. The hypodermic administration of thyroid proteids is greatly superior to oral administration, especially when used in cases of toxic vomiting of pregnancy, or in eclampsia. —*Ex.*

1067

A Disease Little Known. Simple Acute Thyroiditis. WEBER. *Rev. Med. de la Suisse Romande*, No. 3, 1900.

Some of the symptoms of this disease were as alarming as those in malignant tumors. Treatment consisted of cold compresses. Recovery. The secondary form is often found in conjunction with acute articular rheumatism, signum thyroideum and typhoid, less often with influenza, measles, parotitis and cholera. —*En.*

1068

Le Rhumatisme Prolongé des Goitreux. (Acute Articular Rheumatism with Goiter). E. WEILL and G. MOURIQUAND, *Presse Méd.*, Dec. 18, 1900.

Weill asserts that acute articular rheumatism in an individual with goiter has a peculiarly protracted course, apparently unmodified by salicylic medication. He believes that thyroid insufficiency reduces the resisting power of the organism in respect to rheumatism. His and others' experience also shows that thyroid treatment seems to reinforce the defensive processes and he advises tentative thyroid treatment in all such cases. He states that he has never witnessed anything that suggests to him that the goiter is able alone to cause the rheumatism syndrome. —*Ex.*

1071

Zur Behandlung des Kropfes mit Röntgen Strahlen. (Röntgen Treatment of Goiter.). VON EISELBERG, *Wiener Klin. Wchnschr.*, Nov. 18, 1909.

During the last year V. Eiselberg has encountered 3 cases of goiter with extensive adhesions in front to the deep muscles, rendering operative measures extremely difficult. He has never observed anything of the kind in the 753 other goiters he has removed since 1901, and in these 3 cases a course of Röntgen exposures had been given before operative treatment was instituted. The goiter was of the exophthalmic type in 2 of the cases. He asserts that he has never witnessed any pronounced benefit from Röntgen treatment of goiter, while he has observed injury from it, and consequently he does not recommend it to his patients. Surgical measures are giving such favorable results in exophthalmic goiter now, he says, that the decision to operate should be made earlier. —*Er.*

1072

Non-Specific Use of Antidiphtheritic Serum. F. M. FERNANDEZ, *Méd. Record*, Nov. 6, 1909).

Fernandez advocates the use of antidiphtheritic serum in a number of non-diphtheritic diseases, in the nature of infections, either general or local. He has found it useful in suppurative keratitis of whatever origin, in infectious ulcers of the cornea, and penetrating wounds of the eye, in several respiratory affections, bronchopneumonia, and measles. —*Er.*

1075

Diphtheritic Paralysis. H. MERY, *Arch. de Méd. des Enfants*, Sept., 1909.

Mery states that 9 children succumbed to diphtheritic paralysis last year in his 622 cases of diphtheria; and 3 others died of the malignant sore throat without paralysis. Since then he has increased the dosage in such cases and the results have been much better. He reports 18 unusually severe cases in which the impending catastrophe was warded off by the repeated large doses of antitoxin, with 5 others in which the ordinary dosage was used, with fatal outcome. His experience confirms the value of this intensive antitoxin treatment in the unusually severe cases, keeping up the antitoxin during convalescence. While it did not prevent the development of paralysis entirely, yet the latter never appeared except in an attenuated form. Nothing suggesting anaphylaxis and no disturbances from the antitoxin were observed in any instance. The daily dosage ranged from 40 to 60 c.c. for several days. Then, after the throat was clean, from 10 to 20 c.c. were given every day or second day. The antitoxin was given daily and the dose was increased if signs of paralysis appeared until some of the children had received over 500 c.c. of antitoxin, and all recovered. Mery affirms that there need be no fear of anaphylaxis on this dosage, as that is the result of introduction of a small dose of antigen into an organism saturated with antibodies. When the antigen is supplied in large amounts, anaphylactic accidents do not occur, as clinical experience has abundantly demonstrated confirming the theoretical premises. Even when the children showed signs

of "serum disturbances" he did not hesitate to continue to inject more antitoxin, and the favorable outcome realized his anticipations. —*Ex.*

1079

Medical Treatment of Exophthalmic Goiter. S. P. BEEBE, *Louisville Monthly Jour. of Med. and Surg.*, Dec., 1909.

Dr. S. P. Beebe detailed the results of serum treatment of this disease and said that in many respects it was very encouraging. He has seen the effects of surgery as practiced by a variety of surgeons. Men of limited experience should not operate on exophthalmic goiter; none but the most experienced surgeons should undertake this operation, which requires not only great judgment and skill in its execution, but in the preparation of the patient. No greater harm can be done than when a number of young surgeons take it for granted that this is the operation to do and say by all means let us do it right away. They should serve a long apprenticeship under surgeons before doing such a formidable operation. —*Ex.*

1081

Hypochloridization in the Treatment of Ophthalmic Goiter. T. H. EVANS, *N. Y. Med. Record*, Jan. 2, 1909.

After a two weeks' treatment, consisting of strontium bromat, calcium-nitrate, digitalis and saltless food—the tremor and nervousness subsided. The pulse fell from 128 to 96. The treatment is similar to that of epilepsy. —*Ed.*

1085

Present Status of Treatment of Goiter. LEGRAND GUERGY, *Old Domin. Jour. of Med. and Surg.*, Oct., 1909.

This is one of the splendid achievements of modern surgery when we consider the mortality and certainty of cure. Ten years ago the mortality was from 10 to 20 per cent. Surgeons were only willing to operate when forced to, a fact which explains the percentage. There are two classes of goiter—simple and exophthalmic. Medicine cannot influence the encapsulated gland. In simple goiters occurring at puberty, recovery generally ensues. If the thyroid grows after the age of 35 it is wise to suspect malignancy. There is hardly a class of cases which can be approached with better chance of cure. The patient should be made to understand that the good gland is left in situ and only the tumor removed. Nature gives one-sixth as much blood to the thyroid as to the brain. Serotherapy is not uniform in results. Drugs should be given only reasonable trial; if no result, surgery should be tried. —*Ex.*

1090

Points in the Surgical Treatment of Goitre. T. P. LEGG, *The Practit.*, Nov., 1909.

Legg remarks that a curved transverse incision is the best to use; it is usually placed over the lower part of the tumor; if an extra amount of room is required, the ends of the incision may be carried upward. A flap, consisting of skin, deep fascia, and platysma is turned up, and

ample room is obtained for the necessary dissection. The scar of such an incision becomes almost invisible, whereas that which is left after the oblique or vertical incision has been made is often very unsightly and may become very hypertrophied or keloid. In suturing the incision three or four stitches should unite the cut edges of the platysma and deep fascia; these approximate the edges of the skin, and allow the superficial sutures to be removed as early as the fourth or fifth day, and thereby stitch marks are avoided. The infrahyoid muscles are divided high up near to their insertion; they are peeled off the tumor and turned downward. After the removal of the tumor and before sewing up the skin their cut edges are united by two or three sutures; these should never be omitted. Sometimes, instead of dividing these muscles, they may be separated and held aside by retractors; this does not give such a clear exposure of the tumor as their division, to which there is no real objection. A few fibres at the anterior border of the sternomastoid may occasionally require to be divided, but firm retraction of the muscle is usually sufficient. The tumor is gently raised from its bed by passing the fingers around it, and in doing so the close proximity of the jugular vein on the outer side or in front of the tumor must not be forgotten. Moreover, the pressure on the trachea or the dragging may increase the amount of the dyspnea, and during the whole operation the breathing must be carefully watched for any sign of increased obstruction. It is essential to make sure that all vessels are securely ligated before closing the wound. As there is often a good deal of oozing and escape of blood-stained colloid material, it is advisable to put a drainage tube into the depth of the wound for twenty-four hours; a large-sized tube should be employed, its superficial end being placed in the middle of the skin incision. As soon as the effects of the anesthetic have passed off the patient is placed in a sitting posture, supported by pillows, on a bed rest; this position is much more comfortable than the recumbent one with the head quite low. As a rule the majority of patients may be allowed to get up for a short time on the third or fourth day. —E.r.

1109

Perichondritis of the Auricle Treated Successfully by Injection of Fifty Per Cent Alcohol. H. GIFFORD.

Original contribution to *THE LARYNGOSCOPE*, p. 370, May, 1909.

1122

Case of Suppurative Middle Ear Disease With Involvement of the Labyrinth Limited to the Right Portion and to the Left Vestibular Portion.

G. W. BOOT.

Original contribution to *THE LARYNGOSCOPE*, p. 23, March, 1909.

1126

Chronic Interstitial Otitis, or Chronic Middle-Ear Catarrh and Otosclerosis. W. S. BRYANT.

Original contribution to *THE LARYNGOSCOPE*, p. 353, May, 1909.

1134**Clinical and Pathologic Significance of Bacteriemia in Suppurative Otitis.**

A. B. DUEL and J. WRIGHT, *N. Y. Med. Jour.*, Oct. 30, 1909.

Duel and Wright made cultures from 57 patients, 55 ear cases, and 2 frontal sinus cases. In some of the positive cases, one or two repeated cultures were made to confirm the first. Owing to the difficulty in making them, cultures in infants and small children were not attempted. At first only patients just operated on, or about to be operated on, for mastoiditis were examined. In 42 of these this technic was adopted.

Ten c.c. of blood drawn from the median vein was transferred to an Erlenmeyer flask containing 150 c.c. of broth (either plain broth or 1 per cent dextrose) and was then incubated for thirty-six hours at 37 C. It was then thoroughly shaken, its neck well flamed off, and 15 c.c. of the contents poured out into a previously sterilized centrifuge tube. This tube full of blood broth was then immediately centrifuged for fifteen or twenty minutes, the supernatant liquid poured off, and agar slants inoculated from the sediment. In these 42 cases, 15 positive cases of bacteriemia were demonstrated. In a second series of 15 cases the blood was mixed with an ammonium oxalate solution to prevent coagulation, and immediately plated. By this method one positive case was demonstrated.—*Ex.*

1137

Case of Typhoid. T. E. FULLER, *Southern Med. Jour.*, Nov., 1909.

Otitis media as a complication of typhoid has occurred in 2.5 per cent of the collected cases. A male, aged 21, presented the picture of a typical case of typhoid of average severity, temperature ranging from 101 to 104 F. The case was progressing nicely, and the temperature gradually falling when, on January 4, the patient complained of pain in his left ear, and on the same day a purulent discharge appeared. On January 13, the other ear became involved. The temperature up to this time had been but little influenced by the complication. On January 17, considerable tenderness over the mastoids was noticed. Pain became severe and continuous and the temperature rose to 105. On January 22, the condition continued to grow worse, so both mastoids were drained. The patient reacted nicely; the pain and tenderness subsided and good drainage was maintained. For several days the patient improved, and it seemed that he would recover. After this, however, the temperature rose and the patient sank into a typical typhoid state, with low muttering delirium, coma-vigil and all the severe nervous symptoms incident to a profound toxemia, from which he died February 2. At the autopsy, healthy granulations lined the mastoid; no pus was present.—*Ex.*

1139

Acute Attic Suppuration with Hernia of the Drumhead Leading to Transient Labyrinthitis. H. GRADLE.

Original contribution to *THE LARYNGOSCOPE*, p. 791, Oct., 1909.

1157**Report of the Removal of a Bullet from the Inner Wall of the Middle Ear.**

T. W. MOORE.

Original contribution to THE LARYNGOSCOPE, p. 573, Aug., 1909.

1161**Purulent Otitis Media of Infancy and Childhood.** H. O. REIK, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

There are no fundamental differences in the disease as seen at different periods of life. Suppurative otitis media is a distinctive clinical entity, is caused by any one of a certain group of pyogenic microorganisms and progresses according to a definite pathologic course. Owing to the prevalence of abnormally developed lymphoid tissue in the nasopharynx of young children, they are more susceptible than adults to aural infections. Because of certain well-recognized anatomic differences the opportunity for extension of the infection to other organs and structures is much greater in children than in adults, and the disease, therefore, becomes one of more serious consequence. The greater gravity of the affection requires that the physician should be more alert in diagnosing it in children during the earliest stage and most prompt in applying the treatment appropriate to the stage at which the diagnosis is made.

SCHEPPEGRELL.

1162**Report of the Removal of a Bullet from the Inner Wall of the Middle Ear.** G. L. RICHARDS.

Original contribution to THE LARYNGOSCOPE, p. 574, Aug., 1909.

1171**Etiology and Pathology of Suppurative Otitis Media.** J. E. SHEPPARD, *N. Y. State Jour. of Med.*, April, 1909.

Dr. J. E. Sheppard, Brooklyn, says, the immediate and exciting causes of purulent otitis media are the various forms of pyogenic bacteria. Catarrhal inflammations of the nose and nasal pharynx due to colds, influenza, exanthemata, etc., direct irritation due to operative interference, forcible inflation and the nasal douche are also responsible for this condition. The predisposing causes are obstructive affections of the nose and throat, as hypertrophies and adenoids, exposure to cold and lowered resistance of the tissue cells. The pathologic phenomena are swelling of the mucosa, exudation, serous, mucous, purulent, erosion and ulceration, with necrosis of thin membranes; rupture of the membrana tympani; bone necrosis in various directions. This sequence can be applied to some of the exanthemata. —*Ex.*

1180**Eine Beobachtung von Trommelfellruptur bei einer Telephonistin. (Rupture of Membrana Tympani in a Telephone Operator.)** J. WEIS, *Arch. f. Ohrenh.*, April 15, 1909.

A girl, 20 years old, in the employ of a telephone company was signaled in her left ear by one of the subscribers; whereon buzzing and pain set

in, becoming more intense in the course of the day. At night the pain subsided and toward morning the ear became moist. Examination showed right ear, normal; in the left, however, the pale red-colored tympanic membrane appear waved, showing a bloody serous perforation. Functional test: Whisper heard at distance of 2 metres, Weber lateralized to the left, Rinne negative, all showing that the process of middle ear was retarded.

Through euophen and boric acid insufflation, the pains and secretion ceased and perforation closed. Four days later whisper was heard at 3 meters; twelve days after the accident (through the use of the catheter) the normal power was restored. The author discourses on the possibility and prevention of these accidents.—EP.

1181

Two Cases of Cholesteatoma of the Middle Ear. Radical Operation without Removal of the Cholesteatoma Matrix (Siebenmann's Method).

E. HAMILTON WHITE, *Montreal Med. Jour.*, Dec., 1909.

The theory of Siebenmann is that the matrix of the cholesteatoma is not an invasive or pathologic epithelial growth, but a natural attempt at repair, and that the destruction of bone about these cavities is due solely to increased pressure during periods of retention, and the method of treatment by a free exposure of the middle ear spaces by the radical operation without disturbing the matrix, are carefully explained. The advantages claimed for the method are: Epidermization complete in three to four weeks, less tendency to exuberant granulation and narrowing of the cavity; less danger of lessened hearing after operation. A supposed tendency to exfoliation, and relapse, is not the experience in Siebenmann's clinic. Two cases operated upon by this method are cited from the writer's practice. In the first a boy of fifteen years, epidermization was complete in six weeks, and whispered speech heard at forty inches, while in the second, a girl of seventeen years, epidermization occurred in three weeks, with a whisper hearing of over nine feet.

WISHART.

1185

Otosclerosis: Treatment. W. SOHIER BRYANT, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

Otosclerosis is amenable to treatment, with the expectation that in most cases the process of otosclerosis will be arrested and the hearing from treatment. Very advanced cases, however, can also be benefited, to improved. The more advanced the case, the less benefit will be derived a degree.

SCHEPPEGRELL.

1189

Study of the Eustachian Tube in Its Relation to Radical Mastoid Operation. S. OPPENHEIMER, *Med. Record*, Dec. 25, 1909.

Oppenheimer states that to remove all sources of infection in the radical mastoid operation, the tympanic end of the Eustachian tube should be made surgical clean by causing its obliteration. This may be done at the time of the operation or during the after-treatment. When cu-

retting the tube during the operation small oval or round curettes should be used, so that they can pass into the mouth of the tube and as far as possible all diseased bone and mucous should be removed. But great care should be exercised in doing this in the region of the carotid canal, as dehiscences may be present and the artery injured seriously. If skin grafting be employed at the radical operation, the epidermis should be forced well into the tube so that parts of their mucous membrane denuded by curetting will be thoroughly covered. —Ep.

1191

Purulent Diseases of the Eustachian Tube. E. URBANTSCHITSCH, *Monatschrift f. Ohrenh.*, Vol. 43, Heft 7, 1909.

The author concludes as follows: Those cases of middle-ear suppuration in which the perforation is situated in the anterior inferior part of the drum membrane, and which have been considered to be due to disease situated around the tympanic orifice of the tube or to nasopharyngeal disease, are in reality due to suppuration of the tube itself, and should be called "tuborrhoea." This condition is characterized by a wide open tube, due to relaxation of the tube. They should be treated by irrigation of the tube through the Eustachian catheter. The relaxed tube is treated by passing a roughened bougie through the tube and massaging it. Re-infection is apt to occur, but responds readily to repetition of the treatment.

YANKAUER.

1192

A Contribution to Our Knowledge of Acute Inflammation of the Labyrinth. G. ALEXANDER, *Arch. f. Ohrenh.*, Vol. 75, p. 1, 1909.

The author describes four cases of acute labyrinthitis following radical operation. Beginning violently on the day following operation, the symptoms, such as vomiting, vertigo, nystagmus to the healthy side, etc., gradually disappeared during the next week. The author believes the conditions may be ascribed to a serous form of labyrinthitis.

YANKAUER.

1205

Space and Time as Aural Concepts. A Review of v. Cyon's Theory of the Labyrinth. P. FRIDENBERG.

Original contribution to *THE LARYNGOSCOPE*, p. 761, Oct., 1909.

1206

Oto-Laryngology. Recent Investigations into the Diagnosis of Affections of the Labyrinth by the Production of Nystagmus. NORVEN H. GILLESPIE, *Queen's Med. Quarterly*, Jan., 1909.

After a detailed description of the "Turning Test," Caloric Test, and the "Fistula Symptom," the writer proceeds to apply these to certain mastoid conditions: "If the Fistula Symptom is present the radical mastoid operation should be done at once, but with no interference to the labyrinth." "Polypi, strictures and cholesteatomata interfere with the caloric test, and the spinning method must be adopted." . . . "Patients with a labyrinth affection always lie upon the good side, for when the

eyes are turned away from the seat of irritation to look about the room the nystagmus, dizziness, and other subjective symptoms are lessened."

WISHART.

1210

An Investigation on the Anatomical Structure and Relationships of the Labyrinth in the Reptile, the Bird and the Mammal. A. A. GRAY.

Original contribution to THE LARYNGOSCOPE, p. 161, March, 1909.

1217

The Phenomena of Vestibular Irritation in Acute Labyrinthine Disease with Special Reference to the Studies of Dr. Bárány of Vienna.

P. D. KERRISON.

Original contribution to THE LARYNGOSCOPE, p. 179, Sept., 1909.

1229

Clinical Value of the Labyrinthine Nystagmus Tests. DR. MCKENZIE,

Jour. of Laryngol., Rhinol. and Otol., Dec. 1909.

McKenzie summarizes the results of his examinations as follows:

1. In otosclerosis the activity of the vestibular sense bore no relation-ship to the severity of the deafness.
2. In noise-deafness, concussion-deafness and deafness from men-ingitis the vestibular reactions were impaired.
3. In syphilis of the labyrinth the vestibular organ was not invariably affected in proportion to the cochlear.
4. In hysterical deafness the vestibular sense was impaired in pro-portion to the severity of the deafness.
5. In neurasthenic deafness the vestibular system was hypersensitive.
6. In perceptive deafness of indeterminate causation no conclusions were arrived at.
7. In chronic uncomplicated suppuration of the middle ear and in acute mastoiditis, the vestibular reactions were normal or slightly ex-aggerated.
8. In circumscribed labyrinthitis the vestibular sense as tested by measuring the caloric induction-period was impaired; and the impairment was increased after cure by the simple radical mastoid.
9. A case of labyrinthitis was found with spontaneous nystagmus to the opposite side, and with normal vestibular caloric reactions.
10. In temporo-sphenoidal abscess the reactions were normal.
11. After the radical mastoid in uncomplicated middle-ear suppu-ration, the reactions were hastened in two cases and delayed in one. —*Ex.*

1231

Labyrinthine Nystagmus. D. MCKENZIE, *Practitioner*, May, 1909, and *Jour.*

Oph. and Oto-Laryn., July, 1909.

McKenzie sums up his investigations as follows:

1. When destructive processes cause perceptive deafness they gen-erally cause a proportionate amount of damage to the vestibular organ of equilibrium.
2. An exception to this rule is found in otosclerosis, in which the amount of loss of hearing seems to bear but little relation to the amount of impairment of the vestibular sense. —*Ex.*

1232

Necrosis of the Cochlea—Report and Analysis of a Case. A. MICHAELIS,

Ann. of Otol., Rhinol. and Laryngol., Sept., 1909.

Necrosis of the labyrinth is almost without exception a consecutive condition. In the case reported there was a suppurative otitis media of two years' duration. There was a foul discharge and polypi. After clearing canal, a whitish mass was found lying on the floor of the cavum tympani, and proved to be a portion of the cochlea. Under treatment the ear became dry, with complete epidermization of the tympanic cavity. In analyzing the tests conducted in this case, the author also concludes that the delicate membranous labyrinth, and especially the cochlear contents, cannot survive when the bony envelope or framework is destroyed, as the cochlear is probably the sole tone-perceiving and tone-analyzing portion of the membranous labyrinth. When sounds are seemingly perceived on the side whose labyrinth is destroyed, these are only the expression, in a diminished degree, of what the opposite ear is liable to hear.

SCHEPPEGRELL.

1236

Diagnosis of Affections of the Labyrinth. C. F. PFINGSTEN.

Original contribution to *THE LARYNGOSCOPE*, p. 637, March, 1909.

1243

The Problem of Vertigo: Some new Data obtained in a Research into the Functions of the Semicircular Canals in relation to movements of the Eyeball in the Human Subject. By SYDNEY SCOTT, M. S., From the report of the Otological Section of the Royal Society of Medicine, March 6, 1909.

Mr. Scott has made a careful study of the problem of labyrinthine vertigo. He begins his paper with a short historical summary of the conclusions reached by Purkinje, Flourens, Lowenberg, Goltz, Cyon, Mach and Breuer, Crum Brown, Lee and Barany. He describes three types of labyrinthine nystagmus: the horizontal, the vertical and the rotatory type. He gives a list of tables in which he illustrates the methods by which the three main types of labyrinthine nystagmus were obtained, both by thermal methods of Barany, and the rotation on a turning table.

He accepts the view that the vertigo and nystagmus resulting from the caloric tests is due to the motion produced in the endolymph by the application of heat or cold. In a like manner he accepts the view of Mach and Breuer regarding the vertigo occasioned by rotation; that is, that it is due to the inertia of the endolymph.

He describes the method by which he claims he was able to secure a stimulation of the several semicircular canals separately, both by the thermal and by the rotation method. It has been frequently pointed out that a greater effort may be required to provoke nystagmus by rotation in one direction than by rotation in the opposite direction. It has been suggested that the explanation is that each ampullary nerve has a principle and subordinate function. Mr. Scott opposes this view. He believes that this difference can be accounted for more plausibly on the hypothesis that a flow of the endolymph over the nerve endings in the

ampulla is more easily brought about when the endolymph flows from the canal in the direction of the utricle, than when it flows from the utricle in the direction of the canal.

He also accepts the explanation of a nystagmus arising from the labyrinth as a phenomenon connected with the normal ocular fixation.

In discussing the spontaneous nystagmus (ablation nystagmus) following complete destruction of one labyrinth, he offers a new hypothesis to explain this phenomena. It is well known, for example, that if for any reason the function of the labyrinth on one side is suddenly destroyed, there will usually follow for a short time a spontaneous nystagmus directed chiefly toward the normal side. Since a labyrinth in which the function has been destroyed can not cause any reflex action, this nystagmus directed toward the normal side must be occasioned in the normal ear. This spontaneous nystagmus disappears usually in a very short time. Mr. Scott advances the hypothesis that this nystagmus is due to the concussion waves set up in the vestibule of the normal labyrinth by the pulsations in the carotid, and offers as proof of this hypothesis experiments whereby this nystagmus can be produced by increasing the blood pressure, and cases where this nystagmus could be checked by compression of the carotid on that side. How these waves are transmitted through the hard, ivory-like capsule of the labyrinth does not seem quite clear to us, nor is it at all clear why these wave-like motions, arising from the pulsations in the carotid, occur only for a short period after the ablation of the opposite labyrinth. Neither is it clear why the destruction of the function in one labyrinth should be the occasion for the onset of irritation from this source in the normal labyrinth.

His paper shows a great deal of careful work and is well worth reading in the original. Mr. Scott has failed to find anatomical preparations which could convince him of the existence of a cupula over the crista acustica. He refers to the "tapering fibrillae" of the crista evidently meaning the hairs of the hair-cells.

Under the heading of "Application of the hypothesis to a case of long standing defunct unilateral labyrinth," he states that the entire labyrinth on one side was totally functionless, while the other side was normal. As evidence of the destruction of the one labyrinth he states that it did not react to the caloric tests, and that the patient was totally deaf to bone conduction on that side. Of course, it is impossible for a person to have even a pronounced diminution in the bone conduction on one side even though the labyrinth is entirely destroyed so long as the hearing in the other ear is normal.

SHAMBAUGH.

1245

The Significance of Certain Labyrinthine Symptoms. G. E. SHAMBAUGH
Original contribution to *THE LARYNGOSCOPE*, p. 683, Sept., 1909.

1259

Tests of Labyrinth Involvement in Otitis Media. G. P. WINTERMUTE; *Cal. State Jour. of Med.*, March, 1909.

Wintermute describes in detail the tests devised by Barany of Vienna, by means of which the degree of labyrinth involvement may be ascer-

tained in suppurative otitis media and mastoid conditions. These tests are based on the normal reflex reactions of the semicircular canals in producing nystagmus. If the reactions are normal, labyrinth involvement is ruled out; if they are impaired, lost, heightened, or abnormally produced, the condition of the organ of hearing and the objective symptoms may be accurately ascertained. In Barany's tests, the movement of the endolymph is obtained by turning the patient in a revolving chair. As it is impossible, however, to measure the nystagmus while the patient is being revolved, the chair is brought to a standstill after being revolved ten times; the endolymph, following the law of a body in motion remaining in motion is circulating in the direction of the revolutions—toward the right. The nystagmus is to the left, and the patient being stationary the duration of the reflex is timed with a stop-watch from the instant of stopping the revolutions to the time of the cessation of the reflex movement. When the horizontal canal is tested the resulting nystagmus is horizontal. By bringing the patient's chin down and flexing the head forward at right angles, the anterior vertical canals are brought into the plane of the centrifugal force, and the endolymphatic movements take place in them, the horizontal and vertical canals being unaffected. The nystagmus from the anterior vertical canal is rotary, corresponding to the wheel-like motion of the eye, and in direction, follows the law of being contrary to the endolymphatic movement. By bending the patient's head sharply over either shoulder and revolving him in a similar manner the posterior vertical canals receive the centrifugal impact and the resulting reflex is a vertical up and down nystagmus. By successively changing the position of the head in this way, all the canals may be tested and the results show that each canal produces the movement in its own plane. Wintermute also describes the caloric nystagmus test and states that with a normal labyrinth the patient responds with a rotary nystagmus; if cold be used on the right side there is nystagmus to the left, while the reverse is the case if heat is used. If the middle ear be filled with a mass of cholesteatoma or polyps, the caloric change may not reach the canal and there is no reaction.—*Ex.*

1269

Limitation of Oto-Laryngologic Practice. J. C. BECK.

Original contribution to *THE LARYNGOSCOPE*, p. 98, Feb., 1909.

1271

Aural Complications in the Exanthemata. C. R. C. BORDEN, *Ann. of Otol., Rhinol. and Laryngol.*, Sept., 1909.

After a careful analysis of the subject, the author concludes as follows: In scarlet fever, children are quite liable to middle ear inflammation which may or may not involve the mastoid cells. Adults are much less so, and rarely have mastoiditis. In measles both adults and children are very susceptible to middle ear involvements and adults are especially in danger of mastoiditis. In cases where there is a tremendous aural discharge present for more than two or three weeks, the mastoid operation should be seriously considered as a means of providing drainage, other than through a small pin-hole perforation in the delicate membrana

tympani. Occasionally a case will arise, in which the diagnosis may be difficult. If, after carefully ruling out every other possible cause by exclusion the mastoid remains in doubt, and the symptoms of the patient are at all serious, operate. The danger is greatest from waiting. If after the acute symptoms of scarlet fever and measles have subsided, pus in the middle ear is kept active by profuse nasal or nasopharyngeal discharges, examine the patient for adenoids. If the growths are present remove them thoroughly. This procedure in the course of diphtheria, however, is questionable. General practitioners should regard aural discharge as a menace to hearing, and occasionally to life, and not as a more or less common complication without special importance.

SCHEPPEGRELL.

1275

Preventable Deafness. W. S. BRYANT, *Jour. A. M. A.*, July 10, 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 919, Dec., 1909.

1277

Some Remarks on Aural Surgery. D. M. CAMPBELL.
Original contribution to *THE LARYNGOSCOPE*, p. 102, Feb., 1909.

1279

Facial Tic Douloureux. L. PIERCE CLARK and A. S. TAYLOR, *Jour. A. M. A.*, December 25, 1909.

The authors report a case of true tic douloureux of the sensory filaments of the facial nerve, cured by extirpation of the geniculate ganglion. The clinical report is by Dr. Clark, who points out that it has recently been proven that the facial nerve, like the trifacial, is a mixed nerve with its sensory root in the nerve of Wrisberg. He thinks that many of the otalgias will be proved by accurate studies to be due to disorder of this nerve. The operation is described in detail by Dr. Taylor.

—Ex.

1288

The Importance of the Microphone in Examining the Auditory Functions.
G. FERRERI, *Arch. ital. de Otol., Rhinol. e Laringol.*, Vol. 20, p. 1, 1909.
Abstracted in *THE LARYNGOSCOPE*, p. 560, July, 1909.

1289

Foreign Bodies Removed from the Ear. H. FOSTER, *N. Y. Med. Jour.*, Dec. 25, 1909.

Foster reports eight cases to show the variety of foreign bodies which may find their way into the ears. The substances removed were: (1) Three live screw-worms; (2) a piece of a sharp-pointed slate pencil; (3) a bead; (4) a small stone; (5) a grain of wheat; (6) a grain of corn; (7) a small green electric-light bug; (8) a bit of broken pencil. —Ex.

1290

Oration on Otology. F. W. FRANKHAUSER, *Pa. Med. Jour.*, April, 1909.

Dr. Fremont W. Frankhauser, Reading, prepared the oration on Otology, which was read by Dr. Samuel Z. Shope, of Harrisburg, owing to the

illness of the author. Dr. Shope, before reading the oration, stated that for the last eight months Dr. Frankhauser had been suffering from infected eyes brought about during his attendance on a charity patient by the patient sneezing, thus throwing infectious material into the doctor's eyes. A resolution was afterward passed expressing the sympathy of the society and its appreciation of the loyalty of Dr. Frankhauser in preparing the oration when ill.

Attention was called to the fact that the otologist of to-day had advanced in surgery and that abscesses of the brain would be unknown when otologists become sufficiently self-assured to open the mastoid cells, the lateral sinus and the internal jugular vein under aseptic conditions. Every practitioner of medicine should be able to recognize middle-ear disease and to secure its prompt and proper treatment.

—Ex.

1292

The Study of Aural and Laryngeal Complications of Typhoid Fever, Especially as Observed in Hospital Practice. JOSEPH S. GIBB, *Pa. Med.*

Jour., July, 1909.

The author gives the result of his large hospital experience in cases of this character, and his article is one of much practical value. It is not accompanied by any discussion of the literature of the subject, but is useful to the reader because attention is directed to the completely overlooked conditions which possess the greatest importance to the general practitioner as well as to the specialist.

PACKARD.

1295

Spontaneous Hemorrhage from the Ear. H. HALASZ, *Arch. f. Ohrenh.*, Vol. 76, Heft 1, 1909.

A poorly nourished seven month's baby two weeks old, began to bleed from the right ear. Four days later a swelling appeared in the neck which opened and discharged blood. The child also became jaundiced. It died on the eighth day after the beginning of the hemorrhage. The exact cause of the bleeding could not be determined.

YANKAUER.

1310

Nasal and Nasopharyngeal Conditions as Causative Factors in Aural Disease. D. B. KYLE.

Original contribution to *THE LARYNGOSCOPE*, p. 737, Oct., 1909.

1313

Nasal and Nasopharyngeal Conditions as Causative Factors in Aural Disease. G. A. LELAND.

Original contribution to *THE LARYNGOSCOPE*, p. 721, Oct., 1909, and *Boston Med. and Surg. Jour.*, Sept. 30, 1909.

1316

The Importance of Blood Culture in the Study of Infections of Otitic Origin. E. LIBMAN and H. L. CELLAR, *Am. Jour. of Med. Sci.*, Sept., 1909.

A valuable clinical and pathological contribution on a most important, but hitherto but little studied aspect of otology. The author studied in

collaboration a number of cases, and their results are most astonishing. Their method was to withdraw from 10 to 25 cc. of blood from one of the veins of the arm and to incubate the material in agar, glucose agar, serum agar, glucose serum agar, and in bouillon and glucose bouillon with and without serum. Positive results were found only in otitic cases when complicated with meningitis, or sinus thrombosis, including thrombosis of the jugular bulb. A positive blood culture is valuable when there is doubt as to the existence of a sinus thrombosis after a patient has been operated upon for mastoid disease. In many cases the diagnosis is clear enough clinically, but in a certain number of cases in which the mastoid disease has been thoroughly dealt with, and in which there were clinical symptoms still present, and in which the otologist was not sure there was still further local disease, the finding of streptococci in the blood has given the indication to explore the sinus; and in all the cases of this type a sinus thrombosis was found. Blood culture studies have their most valuable field in border line cases. Negative cultures are valuable for several reasons; namely, they should cause hesitation before proceeding to open the sinus in a doubtful case until every other source for the symptom has been most carefully excluded. If the blood culture is negative and the symptoms should persist in a given case, whether it is a sinus thrombosis or not, acute endocarditis can be excluded. If there has been a sinus thrombosis and bacteria have been present in the blood, and the jugular vein has been tied, a negative culture is of value in showing that general invasion has been stopped. A negative culture is occasionally of value in cases with a clinical picture of rheumatism. It is very valuable in such cases to know that we are not dealing with an arthritis due to a general invasion by the ordinary bacteria. PACKARD.

1321

On the Relation of the Faculty of Hearing to the Faculty of Speech.

G. H. MAKUEN.

Original contribution to *THE LARYNGOSCOPE*, Jan., 1909, and *Pa. Med. Jour.*, Jan., 1909.

1338

Importance of the Thorough Study of the Nasopharynx in Treatment of Diseases of the Ear. F. R. PACKARD.

Original contribution to *THE LARYNGOSCOPE*, Aug., 1909, and *Boston Med. and Surg. Jour.*, Dec. 9, 1909.

1343

Nasal and Nasopharyngeal Conditions as Causative Factors in Aural Disease. N. H. PIERCE.

Original contribution to *THE LARYNGOSCOPE*, p. 732, Oct., 1909, and *Boston Med. and Surg. Jour.*, Dec. 9, 1909.

1345

Results of the Prudential Preventive Examination of the Ears of Men Working Under Air-Pressure. CAMILLO POLI *Arch. Ital. di Istol. e Laringol.*, No. 2, 1909.

The author, at the instance of an insurance society, subjected 392 men, working under air-pressure, to aural examination, in order to pre-

vent the most probable auricular disturbances due to want of equilibrium between the external and endo-tympanic pressure of air.

The auditory functional capacity was found to be, from a practical point of view, good when words pronounced in an undertone were heard at a distance greater than 7 or 8 meters; fairly good at 5 to 6 meters, and insufficient when the distance was less than 4 meters. The author has found that in 14 per cent of the men the hearing was perfect, in 72 per cent fairly good, and in 10 per cent insufficient. In comparing those who had already worked under air-pressure with those who had not yet begun, he found but a slight difference in the status of the auditory apparatus. Moreover, in persons with good hearing, he remarked the perfect integrity of the first air-passages and especially of the naso-pharynx in those with impaired auditory faculties of catarrhal form, atrophied and hypertrophied organs, or a deficiency in nasal respiration caused by deviations, often accompanied by lesions of the middle ear, at least in those with deficient audition. He noted that the cause was nearly always dependent upon a catarrhal condition of the middle ear, and in rare cases due to a lesion in the labyrinth.

The author judged the workmen upon both subjective and objective criteria. The men declared unable to work were those who could not hear the voice at a distance of 1 to 2 meters, and who suffered from dizziness and had buzzing in their ears. Accidents after the preventive examinations became much fewer in number and less serious. The aural disturbances, for the greater part, were represented by reddening of the tympanic membrane, by vertigo and by buzzing in the ears. In only one case was there a purulent otitis. In another there was a traumatic necrosis. There were no more cases of simulation or exaggeration.

LASAGNA.

1346

Deafness Following Febrile Diseases. J. A. PRATT, *N. Y. Med. Jour.*

May 15, 1909.

Pratt summarizes his paper as follows:

1. The majority of ear diseases are caused by adenoids and enlarged tonsils.
2. These conditions are in the greater proportion caused by mechanical obstructions of the Eustachian tube.
3. The germs found in the secretions are present in the normal middle ear as they are in the nasopharynx and sinuses.
4. While varying in different parts of the country, from 25 to 30 per cent of the children have adenoids or enlarged tonsils.
5. All hypertrophied lymphatic tissues of the nasopharynx should be early and completely removed, so that mechanical obstruction of the Eustachian tube will not occur during congestion of the nasopharynx, to interfere with the drainage and ventilation of the middle ear.—*Ex.*

1356

The Pathogenic Influence of the Eye on the Ear. • G. STERLING RYERSON,
Can. Practit. and Review, July, 1909.

Referring to the observation of Rollet, that under the irritation of eye disease, such as disease of the cornea, iris, and choroid, the phenomena of tinnitus may be produced, the writer details two cases where this symptom was present. In one with extensive choroidal changes, the tinnitus recurred only when the eyes and head ached. In the other the tinnitus corresponded to the eye chiefly affected.

WISHART.

1359

Drei Vorträge aus dem Gebiete der Ohrenheilkunde. (Otitis Media and the General Practitioner). H. SCHWARTZE, *Münchener Med. Wchnschr.*, May 25, 1909.

Schwartz relates unfavorable experiences with constriction hyperemia in suppurative disease of the middle ear. Notwithstanding the relief of pain after application of the elastic band to the neck, the work of destruction still goes on, and sudden chill and fever may reveal the development of thrombophlebitis. This hyperemic treatment is permissible only in the mildest cases, free from suspicion of intracranial complications. Massage may be useful to promote absorption of exudates and in relief of tormenting subjective sounds in the ear, and he advises it as an adjuvant to other measures, especially when the lymph glands in the side of the neck and below the mastoid process are enlarged. The various apparatus on the market for instrumental massage have never induced permanent benefit in his experience, and it is possible that their incautious use may do harm. A little temporary benefit may be derived in cases of incipient ankylosis of the ossicles or adhesions. In treatment of otosclerosis he has never witnessed striking benefit from potassium iodid, but in cases of syphilitic labyrinthitis less than six weeks in duration prompt recovery follows mercurial inunctions; labyrinthine deafness of longer standing is generally incurable. He has frequently obtained good temporary effects in otosclerosis, especially with simultaneous hyperemia of the labyrinth wall, by systematic sweating with hot air baths. This relieves the congestion in the temporal bone and inflammation is favorably influenced. He has never witnessed any harm from the superheated air applied to the patient in bed; the effect on the heart, of course, is watched. Little is to be hoped from technical-mechanical and operative measures in otosclerosis, but it is a broad field for rational internal treatment of the true cause—the dyscrasia—by general treatment, tonic, revulsive, soothing or antirheumatic, not forgetting the frequently accompanying neurasthenia. Warm saline baths and courses of mineral waters are also useful. Cold water treatment should be avoided, especially sea bathing. He advocates leeches for beginning acute otitis media; they are applied in front of the tragus, over the large venous plexus. This not only relieves the pain, but aborts the inflammation and wards off suppuration. If there is already tenderness at the mastoid process or edema, leeches are contraindicated and the ice bag behind the

ear or incision is required. He defends the use of leeches, citing the ophthalmologists to show that they are indispensable in certain cases.

—Ex.

1361

The General Practitioner and Treatment of the Ears. H. SCHWARTZE, *Münch. Med. Wchnschr.*, June 8, 1909.

Schwartz says that he has repeatedly encountered instances of actual harm done by "pseudospecialists" in otology, or by general practitioners failing to differentiate ear affections or overlooking them or inflicting injury in attempt to extract foreign bodies from the ear. He has known of cases in which the symptoms of internal ear disease, vertigo, cover that the larger joints are affected first speaks for the former trouble; in acute rheumatism the small joints are generally the first involved. When the otitic pyemia assumes a chronic form it is difficult sometimes to recognize it; but abrupt changes from high fever to sub-normal temperature within a single day or a few hours should suggest it. The physician is also liable to blunder by assuming an ear affection when none exists, as in cases of radiating pains from a carious tooth or acute angina, or rheumatic pains, or subjective noises in the ears in chlorosis and anemia without reduction of hearing capacity. Eczema of the outer ear, if neglected, may even simulate a malignant tumor. In a recent case he removed a necrotic cholesteatoma from a patient who was in a very serious condition from the disturbances connected therewith; for weeks she had been under the treatment of a "pseudospecialist," who had diagnosed the case as a furuncle and applied treatment accordingly. A prolapsed, swollen or protuberant tympanic membrane may be mistaken for a polyp, as occurred once in Hyrtl's experience, the attempt at extraction resulting in the death of the patient from meningitis. Operations may be performed on lymph glands in the neck, the surgeon overlooking the casual chronic ear affection. He warns further that repeated injection of a warm fluid into the ear is liable to transform a mere catarrhal affection of the middle ear into a suppurative process or aggravate such. Salt is as efficient in sterilizing the ear as boric acid, he says, and when used for rinsing the ear, in the proportion of a heaping teaspoonful to the quart of boiled water (7.5 gm. to the liter), it prevents the raising up of the epithelium of the mucosa in the middle ear. Blister revulsion does no good in acute otitis media, and insufflation of a powder in cases of suppuration in the middle ear is dangerous, as it may glue up the opening and shut in the pus. It is permissible only with a large defect in the membrane, and the patient should never be allowed to insufflate the powder. He has recently encountered three serious cases of foreign bodies in the ear; in one a small pebble had been forced into the drum by unskillful maneuvers to remove it, and although the pebble was removed later by an operation, yet fatal meningitis resulted. Every year, he adds, a not inconsiderable number of persons lose their lives in consequence of foreign bodies in the ears, but not so much from the foreign bodies themselves as from the attempts to extricate them. Syringing with warm water is all that should be done to extract them. Never, he adds, never allow yourselves to be tempted to

seek to extract them with an instrument. An insect in the ear may be killed by cigar smoke or a little warm water, or, better still, the fumes of chloroform; maggots may be expelled by pouring sterilized oil into the ear; they come to the surface of the oil as they begin to suffocate. The dreaded "earwig" very seldom gets into the ear, but he has known of many instances of fleas, bedbugs, small beetles and mites entering the ear. Numerous cases of injury have come under his notice in which injury resulted from attempts at extraction of a foreign body when there was none present, or it was in the other ear. In case of recent trauma affecting the ear it should not be rinsed out, and manipulations with instruments should be avoided as much as possible. The only correct treatment is an aseptic protecting dressing and rest in bed. Insufflation of air is dangerous, he declares, in sclerosis of the middle ear, especially in unilateral ear trouble, and nose douches and syringing may also affect the ear unfavorably. Intranasal operations often set up an acute otitis, sometimes entailing pyemia; operations for chronic empyema in the accessory cavities should be restricted to the cases with intolerable headaches. Evacuation of the sphenoidal and ethmoidal sinuses may also lead to injury of the base of the brain, with fatal meningitis; the rarity of published cases of this kind does not mean that such mishaps do not occur more frequently. —*Ex.*

1362

Hörsäuschungen durch Salicylsäure. (Auditory Hallucinations from Salicylic Medication.) J. SEITZ, *Corresp.-Bl. f. Schweizer.*

Seitz reports a number of cases in which patients taking salicylates experienced auditory hallucinations for which the salicylate was evidently responsible. The hallucinations were not new ideas in any instance, but long forgotten memories of certain sounds were aroused, the roar of a certain water fall, the singing of birds heard in a certain garden, etc. The minute amount of chemical reaching the cells seemed to bridge the gap between unconscious and conscious memories. —*Ex.*

1363

Aural Diagnosis. G. E. SHAMBAUGH, *Jour. A. M. A.*, April 3, 1909.

Dr. Shambaugh describes the anatomy and physiology of the auricular apparatus and the methods of examining it for diagnostic purposes. He lays down the following propositions as established: "First, if the semi-circular canals are normal and the ear is syringed with cold water, vertigo will result and there will be set up a nystagmus increased by directing the eyes toward the opposite side. If the ear is syringed with warm water the same symptoms will occur, but the nystagmus will be toward the same side. Second, should there exist an irritation of the endings of the vestibular nerve in the labyrinth, such as may be occasioned by a circumscribed suppuration in the labyrinth, there will be spontaneous nystagmus directed toward the same side. Syringing the ear with cold water will produce a positive reaction. Third, if there occurs a sudden destruction of endings of the vestibular nerve, such as would be occasioned by a diffuse suppuration in the labyrinth, there will be set up a spontaneous nystagmus directed toward the opposite side, but lasting

only from a few days to several weeks. This nystagmus has its origin in the opposite normal ear. Syringing the affected ear with hot and cold water produces no response. Fourth, in case of long-standing destruction of the nerve endings in the vestibular nerve, such as occur in chronic diffuse labyrinth suppuration, there will be no spontaneous nystagmus and no reaction can be obtained by syringing the ear with hot or cold water. Fifth, in case of cerebellar disease, such as cerebellar tumor, cerebellar abscess or a meningitis in this locality, there will occur a spontaneous nystagmus directed toward the affected side." Hence with pronounced rotating nystagmus and normal tympanum the presence of a cerebellar tumor may be suspected. On the other hand, the rotating nystagmus in a case of suppurative otitis media without fever, but with severe deafness and nystagmus toward the affected side, while the syringing with cold water produces no response suggests a cerebellar abscess. The complete destruction of the hearing in the affected ear would indicate a probable diffuse suppuration of the labyrinth. The failure to get caloric response on syringing points to destruction of end organs in the semicircular canals. The only spontaneous nystagmus caused by this would be directed toward the opposite side. The lack of rise of temperature in most cases would exclude a meningitis, while a cerebellar abscess pressing on the vestibular nerve could produce a spontaneous rotating nystagmus which would be increased by directing the eyes to the opposite side.—*Ex.*

1365

Post-Graduate Instruction in Oto-Laryngology. G. E. SHAMBAUGH.

Original contribution to THE LARYNGOSCOPE, p. 24, Jan., 1909.

1366

Why a Peripheral Tone Analysis is Necessary to Explain the Phenomena of Tone Perception. G. E. SHAMBAUGH.

Original contribution to THE LARYNGOSCOPE, p. 481, July, 1909.

1369

Functional Paralysis of the Acoustic Nerve. F. G. STUBBS.

Original contribution to THE LARYNGOSCOPE, p. 4, Jan., 1909.

1371

The Ear Tuberculin Reaction. V. TEDESCHI, *Arch. f. Kinderheilk.*, Vol. XLIX. Nos. 3 and 4, 1909.

Tedeschi uses the extremely vascular and comparatively transparent surface of the ear for application of the tuberculin to induce a specific local reaction. Its absolute harmlessness commends this technic, he says, while the test has the advantage of precision and allows better recognition of the specific induration in the depths of the tissues; the whole reaction seems to be more typical and permits more accurate dosage.—*Ex.*

1372

Reflex Aural Neuroses From Eye Strain. S. THEOBOLD, *Jour. A. M. A.*,

July 10, 1909.

Dr. Theobold notes the slight attention that has been given to the effects of eye strain in producing reflex ear troubles. He has not been able to find any mention of these in the Index Catalogue of the Surgeon-General's library. While tinnitus is the aura reflex he has most frequently encountered as the result of eye strain, it is not the only one. Others that may be mentioned are, a "muffled" or "stuffed" sensation in the ear, pain, not severe, and as often felt around and in front of, as in the ear, impairment of hearing which according to the tuning fork indication was due to disturbance of the perceptive rather than of the conducting apparatus. Whether the vertigo recognized as a symptom of eye strain deserves to be called an aural reflex, he is unable to say, but he thinks the derangement causing it may be located in the semi-circular canals. Of tinnitus due to eye strain, he has observed three distinct varieties—the more usual or vascular type, the relatively low pitched whirling or fluttering sound caused by irregular contractions of the tensor tympani, and the high pitched, almost musical, intermittent tinkling produced by like contractions of the stapedius muscle. The evidence in favor of the ocular origin of the aural sensations mentioned is in their disappearance after the relief of the eye strain, their greater intensity when the eye strain is most troublesome or their appearance or aggravation by use of the eyes. The ocular fault often present was astigmatism, sometimes of high degree and associated with other refractive errors though in some cases it was chiefly heterophoric. The most common form of tinnitus is, in all probability, best explained by a vasomotor disturbance of the intralabyrinthine vessels. The "muffled" or "stuffed" sensation may be similarly explained or, like the earache, be due simply to reflex irritation of branches of the trigemius, as in the case of dental otalgia. He first gives his own case, followed by reports of three others. In an addendum he mentions one or two papers discovered in the literature by Dr. Park Lewis which had escaped his own scrutiny.—*Ex.*

1385

The Telephone Theory. J. G. WILSON.

Original contribution to *THE LARYNGOSCOPE*, p. 785. Oct., 1909.

1386

Facial Paralysis Due to Aural Lesions. D. J. G. WISHART.

Original contribution to *THE LARYNGOSCOPE*, p. 832. Nov., 1909.

1394

Il lievito di birra nella cura dell'otite-circoscritta esterna. (Yeast in the Treatment of Abscess in the Ear.) N. ANTENORE, *Gaz. degli Ospedali e della Clin.*, May 4, 1909.

Antenore reports six cases in which circumscribed otitis in the outer ear was treated internally with yeast, taken 2, 3 and 4 times a day.

The tendency to recurring furuncles in the ear was promptly arrested and there has been no recurrence since. The patients took the yeast for about a week. This yeast treatment was supplemented by local application of medicated gauze. Under the influence of the yeast the pain and the morbid tendency rapidly subsided, although the furunculosis had long persisted unmodified by other measures.—*Ex.*

1403

Suction or Hyperemia Treatment of Acute Suppurative Otitis Media.

E. J. BROWN.

Original contribution to *THE LARYNGOSCOPE*, p. 680, Sept., 1909.

1406

The Hot-Air Current in the Treatment of Certain Ear Affections.

L. L. DOANE, *Pa. Med. Jour.*, Aug., 1909.

The author discusses the method of application of hot air to aural conditions, and the value of the hot air current as a remedial agent. He details the various classes of cases in which he has used it, and reports most satisfactory results in cases which had failed to yield to other methods of treatment.

PACKARD.

1407

The Heath Operation for Chronic Aural Suppuration. E. C. ELLETT.

Original contribution to *THE LARYNGOSCOPE*, p. 563, Aug., 1909.

1412

Non-Operative Treatment in Suppurative Otitis Media. E. P. FOWLER, N.

Y. State Jour. of Med., April, 1909.

Dr. Edmund Price Fowler says: Owing to the importance of home treatment, the patient, as he is out of sight of the surgeon for 98 per cent of the time, should be instructed and provided with the means of carrying out orders. The dangers from neglect or from faulty treatment or care are numerous. The object of treatment is not only the abortion, shortening and cure of the disease, but also the prevention of complication, preservation of function and the patient's general health, which is liable to suffer from long-continued suppurations. An adequate reaction of inflammation can be promoted by such means as increasing the hyperemia, leucocytosis, phagocytosis, opsonins, etc., by heat, counterirritation, constriction neck bands, suction cupping, irrigations, dry treatment, antiseptics, hydrolytics, caustics and blood letting. All these have their disadvantages as well as their advantages, and the best method consists in combining all, except the caustic treatment and neck band. Such a method he employs in his suction bell ear douche, with suitable solutions and temperature. All the advantages of the dry and wet treatment are combined and the disadvantages removed by irrigating in the presence of a vacuum, and the tendency to premature closure of the incision in the drum membrane and to adhesions is largely eliminated by this method, which also recommends itself by its simplicity, cleanliness, safety and efficiency.

—*Ex.*

1413**A New Method for Inflating the Eustachian Tube and Middle-Ear.** E. P.

FOWLER, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

The method consists of bringing an increased air pressure to bear on both extremities of the closed portion of the tubal lining by simultaneously condensing the air in the middle-ear and in the nose and nasopharynx. To accomplish this he has devised an apparatus, the simplest form of which consists of an air bag connected by means of a Y-tube to a nosepiece and an airpiece.

SCHEPPEGRELL.

1421**Eine neue Behandlungsweise des Meniereschen Symptomen-Komplexes.**

(Vibration Massage for the Meniere Syndrome.) G. HERZER, *Münchener Med. Wchnschr.*, May 18, 1909.

Herzer has found vibration massage so effectual in migraine, chronic rhinitis and connected conjunctivitis, and in neuralgia of the cranial nerves, that he applied it in a rebellious case of Meniere's disease. The vibration massage was applied to the nasal mucosa and the active hyperemia in the head induced by reflex action had a favorable influence on the inflammatory process and congestion in the semicircular canals. The case described in detail was that of a man of 40; no benefit had been derived from the usual drug treatment. The massage was applied to the nose every second day at first for twelve days; then three, then two times a week for about ten weeks, and there has been no recurrence during the two years since. —*Ex.*

1425**The Present Status of the Treatment of Acute and Chronic Otitis Media Suppurativa.** F. S. KEELE, *Western Can. Med. Jour.*, Aug., 1909.

The writer advocates more conservative observation of these cases, with a less frequent hasty decision in favor of operation. If caries be present and the odor cannot be overcome after a few local treatments, operation is necessary. In acute cases, tenderness in the mastoid appearing on the fifth or sixth day, accompanied by rise of temperature, is an indication for immediate operation.

WISHART.

1429**Behandlung der Ohrverletzungen. (Treatment of Injury of the Ear.)**

P. MANASSE, *Deutsche Med. Wchnschr.*, Dec. 30, 1909.

Manasse discusses mainly the accidents to the ear which the general practitioner is liable to encounter. In case of a bloody or serous collection in the auricle, conservative measures may induce reabsorption, but he prefers to aspirate the fluid with a Pravaz syringe and then push a ball of gauze into the hollow left and apply a compressing bandage. If there is already infection the granulations and necrotic cartilage must be scraped out to check the spread of the perichondritis, as otherwise severe disfigurement may result. He reviews the various injuries that may result from accidents, firearm wounds, etc., but insists that treatment is practically the same for all, namely, absolute abstention from local measures, from rinsing, syringing, probing, etc. The head should be kept

at rest and the ear bandaged with dry gauze. Nothing else is necessary unless a bullet needs removal or otitis media develops, in which case the ear may be drained with strips of sterile gauze or 20 percent borated glycerin may be instilled. If there is a large perforation of the tympanic membrane, boric acid in substance may be used, and cold water compresses are serviceable in case of violent inflammation. As a rule, however, ordinary perforation of the membrane heals without reaction under strict abstention. It is extremely important to refrain from attempts to syringe out clots of blood after a fracture of the bone of the ear or base of the skull, as otherwise infection may easily be carried into the depths, with otogenous meningitis as the result. He has witnessed recovery under measures solely to promote reabsorption, even when the fracture of the base had induced facial paralysis and severe disturbances in hearing and balance. To hasten absorption he generally injects pilocarpin subcutaneously, commencing with 0.01 gm. (1-6 grain) and increasing by 1 mg. a day to 0.02, and then gradually going back to 0.01 gm. with small doses of potassium iodid. Good results can be anticipated, he says, only when such measures are instituted early, before the extravasation has become organized. In case of injury of the ear the wisest are those whose abstention is most complete.—*Ex.*

1440

Über die elektrische Behandlung des Ohres. (The Electrical Treatment of Ear Diseases.) URBANTSCHITSCH, V., *Monatsschr. f. Ohrenh.*, Vol. 43, Heft 1, 1909.

The author has treated about 50 cases of chronic catarrhal deafness by means of the galvanic current. The current was derived from dry batteries and was applied by the patients themselves, a current strength of from 1-2 to 2 ma. being used, and applied every day.

In about one-half of the cases there was noticeable improvement in hearing and a lessening of the tinnitus. In a few cases the tinnitus ceased altogether.

YANKAUER.

1445

Mastoiditis. E. AMBERG, *Med. Record*, April 17, 1909.

Amberg concludes that at present it is impossible to reach an absolutely certain decision regarding the necessity of surgical interference in some cases of affection of the temporal bone. In some cases the groups of symptoms, and in many cases the presence of one or two marked symptoms, makes surgical interference appear imperative. The danger of general inhalation anesthesia in any operation, especially in persons suffering from tuberculosis, should not be forgotten, and local anesthesia might be more thoroughly tested in cases in which general anesthesia is contraindicated. The temporal bone contains numerous groups of cells which may come into consideration in an affection of this bone, and therefore the term "mastoiditis" is sometimes misleading. The construction of the temporal bone is such that a process can go on in the depths without betraying itself by very plain symptoms; marked symptoms may appear suddenly, and in some instances they pronounce the death sentence of the patient.—*Ex.*

1447

Mastoid Abscess. W. J. BUSSEY, *la. Med. Jour.*, Jan., 1909.

Bussey collects from the literature 13 cases of mastoid abscess of very irregular symptomatology, and adds thereto a case of his own, showing the following remarkable points:

1. The absence of well-marked and definite pain in the ear or in the region of the mastoid.
2. No history of discharge from the ear.
3. The drainage of the pus through the Eustachian tube, without perforation of the tympanic membrane and the normal appearance of the latter.
4. The absence of tenderness over the antrum or mastoid.
5. The unusual point at which the pus made its appearance under the periosteum. —*Ex.*

1459

Radiography of the Mastoid Region. S. IGLAUER, *Jour. A. M. A.*, Sept. 25, 1909 and *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 194, Feb., 1910.

1462

Report of a Complicated Case of Acute Mastoiditis of Unusually Rapid Progress Resulting Fatally; Autopsy. A. S. KAUFMAN.

Original contribution to *THE LARYNGOSCOPE*, p. 844, Nov., 1909.

1468

Ergebnisse der vergleichenden bacteriologischen Blutuntersuchung bei Warzenfortsatzentzündungen. (Results of the Comparative Bacteriological Examinations of Blood in Mastoiditis.) LEUTERT, *Münch. Med. Wchnschr.*, Nov. 9, 1909.

Leutert says that the appearance of great quantities of streptococci in the blood of the sinus confirms the diagnosis, particularly when the temperature does not exceed 90° C. and when there is no other febrile disease present. The significant preponderance of streptococci in the blood of the sinus as compared with that in a peripheral vein, determines in doubtful cases whether the high fever is to be ascribed to the aural or to some other disease, the distinctive diagnosis favoring sinus thrombosis. If the number of streptococci in the blood of the sinus is small while they appear simultaneously in the peripheral veins, and if the presence of any other febrile disease can be excluded, this condition confirms the diagnosis of sinus thrombosis already rendered probable by the high temperature. A negative condition in the blood of the sinus and in the peripheral veins does not exclude the presence of a sinus thrombosis with certainty, because in isolated thrombosis of the jugular bulb if the puncture is not made at a very deep place a culturally negative result may be obtained in spite of the presence of the thrombus. In such case the temperature alone decides, or one may wait one or two days longer than is usual, when he is in doubt whether the high temperature is to be ascribed to the ear, and then repeat his

puncture in a deeper place, but this should be done only in very fresh cases, in older cases the number of germs may decline greatly in consequence of the gradual melting away and destruction of the thrombus when the clinical picture will be governed by the metastases. In case of possibility that both sinuses may be involved it is to be assumed to be present in the one in which streptococci are present either alone or in preponderating numbers. If the number is about the same in each, but that in a peripheral vein markedly less, a bilateral sinus thrombosis is present. The presence of metastases indicates as a rule that a sinus thrombosis has existed for a longer time.—*Ex.*

1474

Indications for and Results of Operative Treatment, Including the Simple and Radical Mastoid Operations. W. C. PHILLIPS, *N. Y. State Jour. of Med. and Jour. of Laryn., Rhin. and Otol.*, June, 1909.

Dr. Wendell C. Phillips, New York, says: Bulging of the drum membrane, intense pain and fever, constitute a syndrome of sufficient import to warrant paracentesis of the drum membranes. It is a safe rule to open the drum membrane as soon as the diagnosis of purulent tympanitis becomes positive. A clean-cut incision with a long slender-handled, small-bladed scalpel, with the patient under nitrous oxid anesthesia, immediately relieves pressure, establishes drainage and healing takes place with but little damage and no scar tissue. The patient should remain in bed until all acute symptoms have subsided. The most important operation in intratympanic operations is the removal of polyps or granulation tissue, the most common symptom of which is otorrhea. A simple method of removing large polyps is by the use of a small aural snare. Ossiculectomy is employed as a means of curing chronic purulent otitis media by the removal of diseased tissue and the promotion of drainage. The intratympanic operation is indicated, (1) when a purulent inflammatory process in the middle ear does not respond to treatment and when the diseased process is chiefly confined to the drum membrane, ossicles and tympanic walls; (2) after recurrence of polypoid proliferation, unless such proliferation was associated with extensive necrosis of the aditus, mastoid antrum or labyrinth; (3) as a preliminary to the radical operation. The simple mastoid operation is indicated whenever a purulent inflammatory process has invaded the mastoid antrum and mastoid cells. The indications are as follows: (1) Pain over the mastoid region; (2) tenderness over the mastoid cortex; (3) drooping of the posterior superior canal wall, and bulging of the drum membrane, which does not diminish as a result of paracentesis; (4) fever; (5) discharge; (6) subperiosteal postauricular swelling, with or without superficial abscess; (7) the presence of symptoms of intracranial complications of purulent labyrinthitis; (8) the advent of facial paralysis; (9) blood examinations in conjunction with other symptoms of mastoiditis are of great diagnostic value. Indications that call for immediate operation, whatever the concomitant symptoms may be are, (a) an acute mastoiditis, occurring in an ear which is the seat of chronic purulent otorrhea; (b) symptoms of labyrinthitis; (c) facial paralysis; (d) symptoms of intracranial involvement. The results of the simple mastoid

operation are relief of pain, the cure of the destructive purulent process, the preservation of the function of hearing, the lessened tendency to serious intracranial and labyrinthine complications, the lessened possibilities of recurrence. The radical mastoid operation is performed for the cure of chronic purulent otitis media, by which is meant a number of pathologic conditions all having the common symptoms, otorrhea. The purpose of the radical mastoid operation is to convert the external auditory canal tympanic cavity, the attic, aditus ad antrum, mastoid antrum and mastoid cells when diseased into one wide-open cavity, with the hope that the ramifications of the disease will be terminated. The radical operation is indicated (1) when a permanent cessation of the purulent process has not been effected by prolonged intratympanic treatment; (2) when a cure has not been effected by the removal of necrosed ossicles and curettage of the middle ear; (3) when a sudden cessation of the pus discharge produces chills, fever, vertigo, pain or other unusual symptoms; (4) when symptoms of mastoiditis supervened in chronic purulent otitis media; (5) facial paralysis occurring during the course of chronic purulent otitis media; (6) attacks of vertigo; (7) in all cases of complicating intracranial or lateral sinus involvement; (8) when there are positive evidences of cholesteatoma in the mastoid antrum; (9) when there are fistulous openings in the cortex of the mastoid process or in the osseous canal; (10) whenever depression or other symptoms of disturbed mentality accompany the disease. The operation is contraindicated (1) when the purulent process is tuberculous and accompanied by advanced general tuberculosis; (2) in advanced pernicious anemia or albuminuria and in cachectic diabetes; (3) usually in young children; (4) in cases in which the disease is confined to the ossicles without odor with improper opening in the drum membrane; (6) in all cases in which it is possible to effect a cure by other methods.—*Ex.*

1480

Acute Mastoiditis. S. MACCUE SMITH, *Pa. Med. Jour.*, March, 1909.

The author discusses all the various aspects of acute mastoiditis, the difficulties attending its diagnosis, and the proper method of treatment to be pursued. He lays special stress on the importance of early and free incision of the membrane tympani as a prophylactic and curative measure, and discusses at length the indications for further operative interference.

PACKARD.

1481

Diagnosis of Acute and Chronic Mastoid Disease. J. A. STUCKEY, *Ky. Med. Jour.*, Dec. 1, 1909.

Dr. J. A. Stucky says: "The cure of acute purulent otitis media is simply a question of drainage. Posterior drainage through the antrum will cure any ordinary case in which the mastoid cells are not already involved in a short time with little scar or deformity. If we effect cures in the acute cases we will have no chronic ones. It is the chronic cases that result in loss of hearing and life. Because the general practitioner first sees the acute cases the responsibility of much of the deafness that follows rests on him unless prompt relief is given. Therefore, correct

diagnosis and prompt surgical treatment are most important. What the appendix is to the abdomen the mastoid cells are to the cranial cavity, the point of least resistance, and the easiest and safest to relieve when involved pathologically. Cases of mastoiditis in which the drum membrane and middle-ear cavity show little evidence of disease, and frequent anatomical irregularity, gives rise to misleading symptoms." —*Ex.*

1498

Report of Five Cases of Thrombosis of the Lateral Sinus With Recovery Bearing Upon the Diagnosis and Prognosis of this Affection.

H. FRIEDENWALD.

Original contribution to *THE LARYNGOSCOPE*, p. 13, Jan., 1909.

1503

The Pars Sigmoidalis Sinus Lateralis and its Relation to Processus Mastoideus Ossis Temporalis. H. J. H. HOEVE.

Original contribution to *THE LARYNGOSCOPE*, p. 853, Nov., 1909.

1509

A Case of Thrombosis of the Cavernous Sinus Following Mastoiditis. D. S. NEUMAN, *Col. Medicine*, April, 1909.

A detailed narrative of this rare complication. The patient, a girl aged 9, was seen November 2, 1907, with a tense swelling upon the left mastoid. Ex. aud. canal filled with pus. General appearance indicated severe traumatic origin. Drum membrane opened; discharge. In twenty days swelling of mastoid subsided and diagnosis of fracture in region of lateral sinus and antrum.

Rapid improvement with some purulent otitis to February 27, 1908; when there was severe uncontrollable vomiting, fever, and severe pain and swelling of left mastoid. Mastoid opened March 1. Small amount of pus in antrum; necrosed bone removed over lateral sinus, which was entirely exposed, but as there was some pulsation it was not opened. Some fever. March 10, severe tonsillitis. March 11, pain in right eye. March 12, pain in both eyes, and right eyeball puffy, swollen and tender.

Cavernous sinus thrombosis diagnosed; both sinuses involved, and both eyes become blind March 29. Along anterior border of each steno-mastoid muscle a dense cord felt. Conjunctura incised and abscess opened under right eye; later same for left. April 13, great improvement, vision normal; mentality poor. July 3, vomiting, convulsions of left side of body. Coma. Death. Autopsy showed three abscesses of right hemisphere.

EATON.

1529

Nasal and Sinus Brain Affections. C. G. COAKLEY, *Jour. A. M. A.*, Jan. 9, 1909.

Dr. Coakley says that nasal infection can extend to the brain through the blood, the lymphatics, or by necrosis or perforation of the sinus walls. There is a small portion of the venous blood from the nose that passes into the superior longitudinal sinus through the foramen cecum, and the perineural lymph spaces around the branches of the olfactory nerve are so arranged that it is easy to understand how infective

meningitis may arise from infection along this route. He goes, with considerable detail into the possibilities of brain infection through sinus disease, either suppurative, polypoid or otherwise. Direct perforation of the posterior wall of the frontal sinus is rare according to his observation, but necrosis of the inferior or orbital wall is quite common. Ethmoidal brain infection may occur through necrosis or rupture of the cribriform plate and the thinness of portions of the superior and outer wall of the sphenoid cavity make it easy to understand how they may become ruptured from obstruction of the outlet for a purulent secretion. These causal conditions are sometimes difficult to detect, and Coakley points out why this is the case. There is an acute form of meningitis, he says, involving the cord as well as the brain which is nearly always fatal, in which his sinus examinations have been unsatisfactory and in which he has never felt willing to advise operation. In the less acute type, commonly called serous meningitis, if sinus disease exists, he believes operation is justified as in otitic infection. When sinus disease has long existed in some chronic cases, if other source of infection can be excluded, he would advise operation as in serous meningitis. The operative technic he finds most satisfactory in exploring the sinus by what is known as the ethmoidal route, opening at once into the anterior group of ethmoidal cells, alongside the orbit. By following this back through the whole of the ethmoid labyrinth and opening and enlarging the sphenoid sinus, one traverses and explores very thoroughly the region from which most infections reach the cranial and orbital cavities. One is working by this route parallel with the floor of the cranium and is much less liable to perforate it than by the maxillary operation advocated by some. It is a bloody operation and should be undertaken only by one able to reflect light into the cavity so as to see into the depths of the ethmoid and sphenoid regions. The floor of the frontal sinus can be removed and the cavity probed to find whether it is the seat of trouble. If so it can also be operated on by working through the frontal bone from an incision through the eyebrow and reflection of the periosteum. A short operation is usually advisable in these desperate cases, and Coakley does not recommend the thoroughness used in suppurative sinusitis without cranial complication, but would exenterate the cells as quickly as possible, introduce iodoform gauze drainage through the opening, and leave the wound open without any attempt at suture. Should the patient recover from his acute symptoms, secondary suturing may be done in the course of a few days with but little more scar than if the wound had been closed at the time of operation.

—Er.

1531

Two Cases of Extra-Dural Abscess Complicating Mastoiditis. G. H. COX.

The Maritime Med. News, April, 1909.

In case I the abscess extended backwards about one and a half inches overlying the cerebellum. Dizziness persisted for some months after operation, but finally cleared up.

In case II a sinus led backwards from the antrum for two inches into the posterior fossa. Complete recovery followed drainage. WISHART.

1533

Intracranial Complications of Otitic Origin. EWING W. DAY, *Pa. Med. Jour.*, July, 1909.

The author reports two cases, and in connection with that, reviews the various results on the dura, the brain tissue, and the sinuses which may originate from aural disease. The diagnostic value of the various symptoms and the methods of treatment to be pursued are given in a very clear and lucid manner.

PACKARD.

1537

Brain Abscess of Nasal Origin. DONALDIES, *Arch. f. Ohrenh.*, Vol. 75, Heft 3, 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 123, Feb., 1910.

1541

Mastoid Disease. W. HOUSE, *N. W. Medicine*, Jan., 1909.

House discusses the intracranial complications of this disease. He describes the anatomy of the auditory canal and the mode of development of cranial complications on the blocking up of the secretion from the middle ear which takes place when the Eustachian tube ceases to be patulous. He summarizes the symptoms of various possible complications as follows, evidence of middle ear being presupposed in all, stating, at the same time, that any pulse in the presence of mastoid or middle-ear disease which becomes slower than normal is a danger signal that must not be disregarded:

Extradural Irritation.—Headache, not localized, but worse on same side of skull. Vertigo, usually slight. Special sense symptoms: Word deafness or blindness; partial aphasia; perversions of smell. Psychic abnormalities; pupillary reaction slower on same side than its fellow; knee-jerks increased, but equally.

Extradural Abscess.—Increase in subjective symptoms of above. Appearance of septic symptoms. Increase in opposite knee-jerk. Pupil on same side slower, and in dim light larger than its fellow. Slow pulse. Sighing respiration possible.

Abscess of Cerebrum.—Increase of all signs of extradural abscess: Great headache; stupor and hebétude; pinched countenance; very slow pulse, usually below 56, dropping as pressure increases as low as 26. Numbness of muscles of opposite side. Partial hemiplegia. Impaired deglutition. Irregular respiration. Marked difference in knee-jerks; opposite one greater. Wide pupils: pupil on same side the larger; choked disc or optic neuritis possible.

Cerebellar Abscess.—General signs of pus as in cerebral abscess: Nystagmus; sensation of rotation of objects; intense vertigo; cerebellar fit. Prior to death spread of infection may bring on signs of meningitis.

Meningitis.—Septic symptoms very marked; rapid pulse; irregular respirations; large pupils; semi-consciousness or unconsciousness; rigid neck. Cranial nerve involvement, producing strabismus, conjugate deviation of orbits, etc.; difficult deglutition, Cheyne-Stoke's respiration, high fever and death.—*Ex.*

1551

Case of Double Otitis Media Purulento Chronica with Extradural and Intradural Abscess Extensive Exploration of Brain, Double Exenteration, Recovery with Good Hearing. G. A. LELAND.

Original contribution to THE LARYNGOSCOPE, p. 199, March, 1909.

1556

Intracranial Complications of Otitis Media. J. F. MCKERNON, *Jour. A. M. A.*, Jan. 9, 1909.

Dr. McKernon discusses the intracranial complications of middle ear disease, their location, frequency, etiology, symptoms, diagnosis and treatment. He enumerates them in the order in which he has most frequently encountered them, as follows: 1. Pachymeningitis. 2. Epidural abscess. 3. Thrombosis of sigmoid sinus. 4. Meningitis of the serous type. 5. Thrombosis of the jugular bulb. 6. Thrombosis of the internal jugular vein. 7. Brain abscess, middle and anterior fossa. 8. Cerebellar abscess. 9. Purulent meningitis. 10. Encephalitis. 11. Subdural abscess. 12. Thrombosis of the petrosal sinus. 13. Thrombosis of the cavernous sinuses. The diagnosis of the first two is usually made at the time of a mastoid operation, and their treatment calls for the removal of all diseased bone. Thrombosis of the sigmoid sinus is very often met with; in typical cases the high temperature is an important symptom, chills occur in about half the cases, and edema is occasionally marked over the mastoid. Muscular rigidity is present in advanced cases. Atypical cases usually develop a few days after the mastoid operation, and an important diagnostic sign is the healthy appearance of the wound in the early stages of the disease, except over the bone of the inner table which forms the sigmoid groove, which is darker and free from granulations. If the infection progresses, in two or three days the previously healthy looking parts will look pale and the granulations begin to break down. In primary bulb thrombosis, which occurs usually in young children from acute purulent otitis, the diagnosis in typical cases is based largely on the temperature changes, with the chill or chilly sensation preceding the rise of temperature following the mastoid operation. In cases where the sinus is operated on at the mastoid operation, without prior symptoms as a guide, the diagnosis is based largely on physical signs, the flat, compressible, lusterless, grayish or yellowish dura, etc. Bacteriologic tests and the polynuclear percentage (if 80 or over indicating pus absorption) in the blood count are of value and especially blood cultures. The dark color of the inner table covering the thrombotic area is a valuable sign. In the treatment, if all infective material cannot be removed or normal return circulation cannot be reestablished and evidence of continuous septic process exists, McKernon advises ligation and removal of the internal jugular vein from the clavicle to its entry into the skull. The symptoms and treatment of brain abscess are given. In serous meningitis, which McKernon says is a not infrequent complication of extensive mastoid or sinus disease, lumbar puncture is given as an important aid in both diagnosis and treatment. In purulent leptomeningitis early operation and drainage are the most hopeful measures, but Cushing's suggestion

of the use of urotropin to render sterile the micro-organisms is mentioned. The prognosis of encephalitis from ear disease is bad, though a few patients recover with excision of the extruding brain mass, cauterization and packing with boric acid. Subdural abscess usually ends favorably after early evacuation and drainage. For thrombosis of the petrosal sinus, the only rational treatment is free exposure, evacuation and packing so as to obliterate the blood current. Thrombosis of the cavernous sinus is generally hopeless, though a few cases have been reported as recovering with complete loss of vision.—*Ex.*

1562

Cerebral and Epidural Abscess of Otitic Origin. G. T. ROSS.

Original contribution to *THE LARYNGOSCOPE*, p. 538, July, 1909, and *Montreal Med. Jour.*, May, 1909.

1564

Otitic Brain Abscess. B. SACHS and A. A. BERG, *Med. Record*, Jan. 23, 1909.

Sachs and Berg discuss in this article the difficulties of brain abscess, with special reference to drainage. Localization is most common in the temporosphenoidal lobes or in the cerebellum. If the former, there will be, in addition to general symptoms—headache, somnolence, nausea, vomiting and slight optic neuritis, some hemiparesis and impairment of speech perception. Sensory aphasia is a common accompaniment of otitic brain abscess in the temporosphenoidal lobes. Right temporosphenoidal abscess is sometimes associated with dysarthria, not with sensory aphasia. Abscess in the cerebellum, in addition to general abscess symptoms, may show cerebellar ataxia, diminution or increase of deep reflexes, abducens paresis, acoustic nerve symptoms, and possibly cerebellar seizures. The motor area is rarely the seat of otitic brain abscess, wherefore the author's second case reported in this article is important, because it proves that an undoubted otitic abscess may involve the motor area. The three main considerations from a surgical viewpoint are: 1. A wide exposure of the area of the brain in which the abscess is supposed to lie. This is best done by raising an osteoplastic flap. 2. A most important consideration is the protection of the meninges against infection by the purulent contents of the abscess cavity. If this lies near to the cortex of the brain, or on it, it is more than likely that the meninges will be protected from infection by a barrier of natural adhesions that have formed before the operation is done. These are the most favorable cases for surgical interference. 3. Proper drainage of the abscess cavity. Here we must remember that there are two entirely different kinds of abscess cavities in the brain—one, with soft walls that readily collapse when the contained pus is evacuated; and the other with rigid walls that show no tendency to fall together, and that must be obliterated by the slow process of granulation. In the former, all that is required is the establishment of drainage by a thin slip of rubber tissue at the most dependent point of the cavity. In the latter the drainage must be by a tube of some kind, whether rubber, decalcified bone, or other material, according to the choice of the operator. This

tube must be inserted at the lowest point of the abscess cavity, otherwise there is bound to be retention of pus —*Ex.*

1566

The Ocular Manifestations Associated with Intracranial Lesions Complicating Aural Disease. S. MACCUE SMITH, *Pa. State Med. Jour.*, Dec., 1909.

Dr. Smith believes that ocular symptoms are invaluable, when present, as an aid to the diagnosis of intracranial lesions complicating aural disease. The diagnoses should not be questioned when their symptoms point to a certain condition, notwithstanding the absence of changes in the visual field.

"Ocular symptoms, with the exception of nystagmus, are of definite significance to the extent that they appear to develop only when otitis has involved the tissues within the cranial walls. Hyperemia of the nerve head, neuritis, and papilledema point strongly to the conclusion that intracranial lesions exist or threaten, but do not justify any conclusions as to their exact nature. The absence of intraocular changes does not exclude the presence of intracranial suppuration. Given other characteristic symptoms, a negative ophthalmoscopic examination has absolutely no significance.

"Deep seated, purulent diseases of the ear, in affecting the brain, may lead to pathologic changes involving the ocular tract. Affections of the brain and its membranes (sinus thrombosis) produce lesions of the optic nerve (hyperemia of the papilla, neuritis, and less frequently papilledema), amaurosis, paralysis of the muscles, inflammation of the orbit and the lids. All are of especial value in the diagnosis and treatment of aural disturbances.

"The importance of the association of the eye with the ear through their nervous connection has been largely overlooked in the past.

"The eye symptoms, of reflex origin, are influenced through the eighth or auditory nerve. The simultaneous supply of the ear and the eye by fibers of the trigeminal nerve explains why, in purulent middle ear disease, we may have irradiating, boring pain in the orbital cavity, as well as supra-orbital and infra-orbital neuralgia. Associated with this condition there are often conjunctivitis and lacrimation. Reflex blepharospasms has been observed.

"Nystagmic conjugate deviation of the eyes is not uncommon in diseases of the labyrinth and in the destruction of the semicircular canals, whether of traumatic or inflammatory origin."

The author discusses at length the various ocular manifestations of aural disease concluding his most interesting article with the following summary:

"Eye symptoms, like blood examinations, should not influence the diagnosis of an intracranial lesion in the presence of other distinctive symptoms.

"In brain abscess, ocular symptoms may be absolutely lacking, or they may occur late as to make it impossible to wait for their appearance.

"In meningitis ocular symptoms are frequently present, but are variable.

"In extradural abscess and sinus thrombosis there are no eye symptoms unless the condition is extremely far advanced.

"Labyrinthitis usually has nystagmus as a constant symptom from the beginning of the inflammation.

"For diagnostic purposes, the eyes should be subject to frequent examinations by an expert in all severe aural disease."

PACKARD.

1567

Cerebral Abscess. W. TAYLOR, *Med. Press and Circulars*, Jan. 20, 1909.

Taylor discusses cerebral and cerebellar abscesses, and particularly makes the point that, in these days of diagnostic lumbar puncture, great caution must be displayed in using it in the presence of cerebral or cerebellar abscess, lest the altered conditions of tension lead to rupture of the abscess into the membranes.—*Ex.*

1588

Otogenic Meningitis. H. MYGIND, *Jour. A. M. A.*, Sept. 11, 1909.

Dr. Mygind says that his experience does not support the supposition that otogenic meningitis is the result of pus retention in the middle ear, but rather that the nature of the suppuration and the anatomic relations of the petrous portion of the temporal bone and the mastoid process play the most important part in the pathogenesis. Meningitis is often produced through a suppuration of the labyrinth, a fact to be borne in mind during operation. Phlebitis of the sigmoid sinus is not infrequently the medium, which is also to be remembered. In other words, otogenic meningitis is often combined with suppurative otitis interna and with sinus phlebitis, the two latter being often primary in relation to the meningitis. The impression is, however, that the middle-ear suppuration now and then spreads explosively to all parts of the cranial cavity simultaneously, causing two or more intracranial complications. There is but one trustworthy objective sign, in his opinion, of this form of meningitis, namely, turbidity of the cerebrospinal fluid, caused by overproduction of round cells. He lays stress on this because otitis media can cause the subjective signs of meningitis, and also the objective signs, like neck rigidity and Kernig's sign, without producing diffuse purulent leptomeningitis. On the other hand, a few cases are reported in the literature, of abscess of the brain and sigmoid sinus phlebitis, with turbidity of the cerebrospinal fluid, without the autopsy showing evidence of actual meningitis. These he is inclined to think are cases in which the patient has been cured of the disease before death from another cause. He describes the symptoms of this form of the otogenic meningitis and discusses the diagnosis at length. This is often difficult. It may be hard to say whether the meningitis is consequent or merely incident to the ear disease. The latter may continue a long time without producing the former, and there is reason to believe that there are states of the meningitis in which all the subjective and objective signs are present without the pathologic changes being developed or turbidity appearing. This is of importance as it gives us a right to hope for bet-

ter results from early treatment. Secondly, meningitis may be simulated by pneumonia and other acute infectious diseases, causing the so-called meningismus or menigeal irritation, often appearing in young persons, especially in infants, in whom the real meningitis does not occur. The diagnostic points for meningitis given here, are the late appearance during the course of the ear disease, the sudden and intense inception, the possible absence of retention or of mastoiditis, the rapid course and intensity of the symptoms, as well as the age, as before mentioned. Tuberculous meningitis differs in that it is secondary to other tuberculous manifestations, has a preliminary stage, is less intense and is accompanied with lower temperature and more frequently exhibits focal symptoms. Typical otogenic cerebral abscess differs from otitic meningitis in having a distinct prodromal stage, slower development of symptoms, more frequent focal symptoms, and produces slow cerebation and slow pulse. All subjective and objective signs, however, may mislead excepting turbidity of cerebrospinal fluid. Clear cerebrospinal fluid does not absolutely exclude meningitis, as it always takes some time for the fluid to become opalescent. Besides lumbar puncture, there are two other diagnostic methods of value, namely, examination of the hearing, and of the static part of the labyrinth by injection of cold water. If the labyrinth is destroyed, no nystagmus is produced, and this points to meningitis caused by destruction of the labyrinth. His experience of the operative treatment is limited to eighteen cases, in all of which the diagnosis was confirmed by lumbar puncture. Three patients recovered entirely, which he thinks is an encouraging result, though he admits the element of chance as possibly having a hand in the success of these cases. —*Ex.*

1596

Cerebral Surgery. H. CUSHING, *Jour. A. M. A.*, Jan. 16, 1909.

Certain principles in cerebral surgery are considered of special importance by Harvey Cushing, who first insists on the importance of a knowledge of the nervous system and its diseases on the part of the surgeon, and the need of his taking account of the functional as well as the actual structural abnormalities he has to treat. Often the relief of the functional element is more to be desired than the cure of the organic lesion. The special points of technic on which he lays stress, are, first, the anesthesia—the complete shutting off of the anesthetist from the operative field, which he accomplishes by means of an arrangement of the operative sheets that completely cuts off the anesthetist, and he secures free respiration in the prone position by a special form of outrigger to the operative table. The continuous auscultation by the anesthetist of the cardiac and respiratory action is also provided for by a phonendoscope attached to the patient's chest by adhesive strips and connected with the anesthetist's ear by a device like the headgear of a telephone operator. This he considers especially important. The next thing mentioned is the subtemporal decompression trepanation as an early measure in case of possible brain tumor that cannot be exactly localized. This is performed in a safe area, and is often of itself sufficient to relieve symptoms. If localizing signs appear later, the re-

moval operation can be performed. While in tumors above the cerebellum lumbar drainage is invaluable, Cushing calls particular attention to the dangers of lumbar puncture in cases of subtentorial tumors, from forcing down the brain substance into the spinal canal. The possibility of an unsuspected cerebellar growth, he thinks, should always be kept in mind, and the puncture not made unless the dura is exposed and ready for immediate opening in case medullary symptoms supervene. This leads him to speak of the value of a bilateral opening with wide exposure in other cases of growths difficult of access, which is also useful in preventing compression or mutilation of cerebral tissue in operation. In the older high operations for removal of the Gasserian ganglion, there was also much of compression and contusion of the temporal lobe, although no tumor was already compressing the brain, and Cushing gives special cautions for this procedure. He is able to report seventy-four operations with only two deaths, and he prefers the simple evulsion from the pons of the sensory root alone, leaving the ganglion in its bed with a half-inch gap between its hinder border and the original pontine attachment, a gap he thinks not likely to be bridged, even admitting the possibility of a central regeneration. —*Ex.*

1599

Treatment of Acute Mastoid Disease. L. S. GIVEN, *Ky. Med. Jour.*, Dec. 1, 1909.

Dr. Lamm S. Givens says: "The two most important points in the management of acute mastoid disease that have not already been emphasized appear to be transillumination and examination of the pus for bone debris. Each of these has been written on, but neither has received the attention that it deserves. Examination of the mastoid by transillumination is based on the fact, which can be easily demonstrated, that the healthy normal mastoid will transmit light, while a mastoid filled with pus or granulation tissue will obstruct the passage of light. In the acute cases which hang on for a considerable time, and in the subacute cases it is desirable to know, so far as possible, the extent of the pathologic changes within the mastoid.

"If the bony partitions between the mastoid cells are broken down, bone debris will be found in the pus. When bone debris is found it is positive evidence that an operation should be performed. Looking on mastoiditis as a preventable disease, however, prevention is the thing to be aimed at by those who have the opportunity to institute such measures." —*Ex.*

1600

Cranial Technic. F. HARTLEY, *Jour. A. M. A.*, Jan. 9, 1909.

Dr. Hartley enumerates the following as the prime requisites for avoiding the dangers of shock and sepsis in operations on the brain: 1. Instruments which will open the skull quickly over any desired area and to any extent. These are the motor, saw and guard, osteotome, drill, fraise and measure. 2. A method of craniocerebral topography permitting an accurate exposure of the desired area. Chipault's is the best method, adapted to the skull of all ages, races or individual

peculiarities. 3. Osteoplastic flaps cut so that they will expose the desired area in the easiest manner. 4. The replacing of the bone flap in every possible case or covering the defect with an accurately fitting foreign material (celluloid or aluminum). He prefers autoplasty when possible. 5. The most perfect hemostasis in the preliminary as well as in the final steps of the operation. The operation he divides into two steps, the first concerned only with the skull, the final with the dura and brain. All drugs should be given up several days before operating, and a record of pulse rate and blood pressure should be taken twenty-four hours before operation. The patient's head is raised on the table between 15 and 30 degrees, which Hartley has found sufficient to stop venous bleeding and lower arterial pressure. He has not been able to compare the effects of Crile's rubber suit and carotid compression or of Dawbarn's sequestration-anemia with this, but if they will improve the arterial pressure better than elevation and with no greater danger of inducing sudden syncope, he will certainly use them. During the operation he would have the blood pressure recorded by the anesthetist by a sphygmomanometer on the arm, as a sudden fall will warn the operator of any impending sudden collapse, and will probably enable us to avoid the 25 per cent of sudden deaths following prolonged operations. The details of the two steps of the operation are given and the necessity of careful hemostasis during the second stage emphasized, as well as the importance of avoiding infection of the lateral ventricles. Possible later complications are: 1. Shock, in prolonged operations with hemorrhage or after large tumors have been removed and the cerebral statics disturbed by the space left. In such case the acute cerebral edema of von Bergmann occurs. To avoid this Hartley tampons and gives counter-pressure through the flap. 2. Hyperpyrexia: This occurs after both severe and moderate handling of the brain, especially if the ventricles have been opened, and is due to toxicity of the neoplasm secretion, infection or irritation of thermic centers in the bulb. 3. Encephalomeningitis may be due to injury or to infection from the patient's blood or without. It usually appears during the first month after operation, coming on slowly with localized convulsions, contractures, paralyses, somnolence, mental torpor or delirium. 4. Hernia may be present at the time of operation as a tumor of the base or as a voluminous tumor of the centrum ovale, or at a later period in the form of encephalitis. The latter part of the article is given to the recently reported results.

—Ex.

1601

A Plastic Mastoid Operation—A New Operation for Acute Mastoiditis.

FRANK T. HOPKINS, *Ann. of Otol., Rhinol. and Laryngol.*, Dec., 1909.

The method described consists in making a meatal opening through the concha and posterior canal wall, the complete closure of the posterior, or initial incision, the cicatrization of the excavated mastoid surface; in other words, the application to acute cases of the plastic methods now used only in radical operations. The advantages claimed for this method are its simplicity, its ease of handling, its better appearance, its rapid healing, with perfect safety and the better hearing which results.

SCHEPPEGRELL.

1605**Treatment of Facial Paralysis Due to Division of Facial Nerve in the Mastoid Operation.** F. MARSH, *Brit. Med. Jour.*, June 5, 1909.

Marsh reports two cases in which the facial nerve was divided during a mastoid operation. In one case the facial nerve was completely divided, and the proximal end frayed and everted by the gauze packing. The proximal end was teased into its normal position—coming almost in contact with the distal end; two or three strands of fine chromic gut were placed around the nerve, the ends being inserted into the bony canal, and the parts protected for a short time by gutta-percha tissue in the manner described by Sydenham. Gentle galvanism was subsequently employed; slight return of power commenced in six weeks, and complete recovery resulted. In the other case the facial nerve was divided on January 14, 1908, in clearing a cholesteatomatous mastoid which had been operated on twice previously, the relation of the parts being much altered by bone absorption. The division was recognized at the time, and the nerve ends were carefully approximated and protected for a few days with gutta-percha tissue. The operation cavity became rapidly covered with epidermis from the meatal flaps, under hydrogen peroxid and spirit treatment. As no sign of regeneration appeared in a month (February 13), it was decided to reopen the cavity and examine the nerve ends. The ends were readjusted and a strand of fine chromic gut was with difficulty inserted in each of the aqueduct openings. The post-aural wound was closed and the cavity rapidly healed with suppuration. Gentle galvanism was continued, but it was not until the end of June—four months later—that signs of power commenced in the mouth muscles; the improvement steadily extended to the other muscles, and the power had by May 7, returned to all except the corrugators of the brow.—*Ex.*

1610**The Toilet of the Tympanum and its Relation to the Success of the Radical Mastoid Operation.** G. ROYCE, *Can. Lancet*, Oct., 1909.

Abstracted in *THE LARYNGOSCOPE*, p. 158, Feb., 1909.

1614**The Mastoid Operation.** CORNELIUS WILLIAMS, *Med. Herald*, Sept., 1909.

In the author's experience there are some who, being incompetent, attempt the mastoid operation, others who, trying, fall short of the necessary anatomy of the region and its diseases; and still others who, though aural surgeons, have not acquired "a facility of technique sufficient to do the best operation measured by any recognized standard of to-day."

The technique described is chiefly interesting as presenting the details of the use of the dental burr in this operation, and of the method of closing the wound, and the first dressing. Infection of the wound is rare, and healing is by first intention. With the burr, Williams finds it safe and easy to expose the membranous wall of the sinus, or to expose the dura, if necessary. In the radical operation the posterior wall can be rapidly and easily cut away with an appropriate burr, with less danger to the nerve than by any method known to the author. EATON.

1619

Two Tests for the Diagnosis of Ossicular Ankyloses and Instruments for Their Production. E. P. FOWLER.

Original contribution to *THE LARYNGOSCOPE*, p. 241, April, 1909.

1621

Anesthésie du conduit auditif externe et de la membrane du tympan par le chlorure d'éthyle. Nouveau speculum permettant l'évaporation instantanée du chlorure d'éthyle. (Anesthesia of the External Auricular Canal and of the Tympanic Membrane by Ethylic Chloride. New Speculum Allowing the Instantaneous Evaporation of the Ethylic Chloride.) J. C. KOENIG, *Rev. hebdomadaire de Laryngol., d'Otol. et de Rhinol.* Nov. 6, 1909.

Koenig has modified the method suggested by Dr. Ed. H. Schild of applying ethylic chloride anesthesia to the membrane tympani and the external auditory canal. For this purpose he has devised an ear speculum furnished with a small tube passing along its whole length and ending with an olive to which a rubber tube is attached so that it may be operated by the mouth of the operator. This tube is so arranged that a jet of chloride may be directed against the membrane. This evaporates immediately, producing an immediate freezing of the drum. There is no need of an assistant. The anesthesia is complete and a paracentesis may be performed in ten seconds.

SCHIEFFELGREGG.

1626

Abundant Metal Flap for Radical Operation. F. WHITING.

Original contribution to *THE LARYNGOSCOPE*, p. 561, Aug., 1909.

1627

An Instrument Which Facilitates the Removal of the External Nasal Wall. C. W. BISHOP.

Original contribution to *THE LARYNGOSCOPE*, p. 848, Nov., 1909.

1633

Self-Retaining Submucous Specula. S. G. HIGGINS.

Original contribution to *THE LARYNGOSCOPE*, p. 705, Sept., 1909.

1642

The Pharyngoscope, A New Electrical Instrument for Examination of the Pharynx, Posterior Naris, Eustachian Tube and Larynx. H. HAYS.

Original contribution to *THE LARYNGOSCOPE*, p. 528, July, 1909, and *N. Y. Med. Jour.*, Aug. 21, 1909.

1644

A Modified Tonsil Snare. J. R. NOYES.

Original contribution to *THE LARYNGOSCOPE*, p. 239, March, 1909.

1645

Tonsil Separator and Tonsil Forceps. F. C. TODD.

Original contribution to *THE LARYNGOSCOPE*, p. 371, May, 1909.

1648

Artificial Illuminants in Laryngoscopy. A. C. MORRISON.

Original contribution to THE LARYNGOSCOPE, p. 112, Feb., 1909.

1649

Some Observations on Esophageal Cases and the Presentation of Two New Instruments. H. P. MOSHER.

Original contribution to THE LARYNGOSCOPE, p. 401, June, 1909.

1654

The Respirometer and its Disinfection. C. A. BUCKLIN, *Archiv. für Laryngol.*, Bd. 22, Heft 2, 1909.

The writer has constructed a device which he calls the respirometer, the employment of which decides when a nasal operation is necessary, the nature of the operation required and the atmospheric relations attained as a result of operative procedures in chronic diseases of the respiratory tract.

The respirometer after use is disinfected by placing it in a vulcanized rubber case containing an aqueous solution of bichloride of mercury (two commercial tablets to each fluid ounce of water). Before its further use the respirometer is cleansed well with water.

With this instrument the writer claims that one can measure the effect produced by any nasal operation, and especially prevent disputes amongst the profession as to whether an operation is necessary or not. Also he has learned clinically, that equalizing the external and internal pressure during inspiration has a beneficial effect upon the health of the patient. This equalization is attained with or without operative interference by an elevation of altitude or by enlarging the nasal passages.

The writer has been led to the following conclusions by the use of the respirometer: Persons, who have large nasal openings are unable to raise water in the respirometer 12 or 18 inches, will not have hay fever or asthma unless due to heart complications and can be cured of pulmonary tuberculosis within eight months with the aid of the diet which he recommends.—ED.

1657

Untoward Results With Diphtheria Antitoxin With Special Reference to Asthma. H. F. GILLETTE, *Therapeut. Gaz.*, March, 1909.

Dr. Herbert F. Gillette, says: About a year ago I published a letter asking for reports of cases in which the injection of diphtheria antitoxin had been followed by alarming symptoms or death, especially noting whether there was any history of asthma in the cases. Out of 40 answers received the information was definite and positive concerning 23 cases. Out of the 23, 16 patients gave a history of some form of respiratory disease. Six of the 16 patients died and 10 went into a state of collapse, with final recovery. Seven of the 23 gave no history of respiratory distress and the fact was definitely determined. Four of the 7 cases died and 3 went into a state of collapse with final recovery. The conclusions based on these reports was as follows: 1. There is a certain element of danger if any form of horse serum is used in subjects

who have suffered from any form of respiratory embarrassment such as asthma, the so-called cardiac or renal asthma; hay fever, with resulting asthma, subjects liable to irritation of the mucous membranes when about a horse or stable. 2. Collapse or death was accompanied by a respiratory crisis and, when death occurred, it took place usually in less than ten minutes from the time of injection. 3. The administration of any form of horse serum is liable to cause collapse or death, if the subject suffered from respiratory distress and it is not due to any form of the antitoxin, or to any error on the part of the maker of the serum or to the age of the serum, but to some highly organized proteid present in the serum and the reaction of the proteid causes the crisis. This reaction takes place only under certain conditions. 4. The heart continues to act long after respiration has ceased. This report is only a preliminary one.—*Ex.*

1658

Adrenalin in Bronchial Asthma. N. VON JAGIC, *Berl. Klin. Wchnschr.*, March 29, 1909.

Jagic reports five cases to show the remarkable benefit from adrenalin in arresting acute attacks of asthma. No harm was observed even when the adrenalin was injected a number of times. The effect is analogous to that of atropin on the vagus, although the adrenalin acts on the sympathetic.—*Ex.*

1659

Treatment of Bronchial Asthma by Vaccine. D. W. C. JONES, *Brit. Med. Jour.*, Oct. 9, 1909.

Carmalt-Jones suggests that one cause of spasmodic dyspnea in chronic bronchitis is a specific bacterial toxin, the result of a definite infection and amenable to treatment by the corresponding vaccine. In 1907, while making some investigations into the bacteriology of chronic bronchitis, he isolated a certain organism in nearly pure culture from the sputum of a female patient. He took her opsonic index to this, and finding it low, suggested inoculation, to which she agreed. She was given a dose of 25 millions hypodermically, and was instructed to come back in two days. She suffered severely from bronchial asthma. On her return she said that though her cough was no better her breathing had been much relieved. Carmalt-Jones used the same vaccine extensively among patients suffering from bronchial asthma, in about 70 cases in all, and of these he has collected 52, who gave the experiment a fair trial, that is, who attended for inoculation at least twice. Taking results as a whole, 31 patients have found some degree of improvement in the frequency, and 39 in the severity of their attacks; 26 have improved in their powers of taking exercise, and 29 have slept better. In some cases improvement has been slight and in others temporary. In 4 patients no improvement at all has resulted.—*Ex.*

1660

Hayes' Asthma Cure. J. KOCHS, *Jour. A. M. A.*, Oct. 2, 1909.

In its pharmacologic department the *Jour. A. M. A.* October 2, replies to a correspondent requesting information concerning the "Hayes method for Asthma and Hay Fever" by giving the analysis of six of the

seven remedies by J. Kochs in the Pharmaceutical Institute of the University of Berlin. The active remedies seem, according to this analysis, to be chiefly iodides and tonics (quinin, and iron in the form of peptonate) with emulsions of oils of turpentine and peppermint and sugar-coated pills of jalap.—*Ex.*

1662

Asthma. W. LLOYD, *Brit. Med. Jour.*, Jan. 16, 1909.

Lloyd holds that the only theory as to the causation of asthma that can be successfully maintained in the present state of our knowledge is that it is essentially a nervous disease due to spasm of the bronchial muscles induced reflexly by irritation of either the nasal mucous membrane or the alimentary canal, the former being the comment. There are three factors in its causation, namely, (1) the presence of hypersensitive areas in the nasal mucous membrane or a special sensitiveness of the gastric mucous membrane; (2) a special irritability of the pulmonary nervous system, which constitutes the asthmatic idiosyncrasy with which the individual was born; (3) the presence of an irritant—for example, odors, dust, smoke, etc.; or errors in diet when of gastric origin. The absence of any one of these factors is sufficient to prevent the disease. In the treatment of the paroxysm search should be made for the exciting cause, and when found it should be removed if possible. If the atmosphere contains anything irritating the patient must be removed. The best posture is in an armchair before a table with a cushion on it, so that the patient can rest his elbows and throw himself forward. Ipecac powder, administered early, often cuts short an attack for the rest of the night. A pipe of tobacco acts admirably on some patients. Coffee, very hot and strong, and without sugar and milk, is an effectual remedy. Alcohol, chloroform and cocain are valuable remedies. Other remedies mentioned are stramonium smoking and the fumes of burning nitre paper. Potassium iodid, in the author's experience, has given very little relief. An asthmatic should dine early, 5 p. m., at the latest if he goes to bed at 10, and the food should be nutritious, easily digestible, plain, well cooked and containing the proper proportion of animal and vegetable elements. Rectification of disease or deformity of the nose is important. When such is not present, cauterization of the asthmogenic areas must be practiced. Common salt solution is the best nasal cleanser; other salts are irritating.—*Ex.*

1663

Asthma Following Operative Measures in Ethmoiditis. D. MACPHERSON.

Original contribution to *THE LARYNGOSCOPE*, p. 295, April, 1909.

1664

Therapeutische Kälteapplikationen. (Application of Cold to the Back of the Neck to Relieve Asthma). J. MARCUSE, *Münch. Med. Wchnschr.*, Oct. 5, 1909.

Marcuse confirms Muck's announcement in regard to the efficacy of the sudden application of a jet of cold water to the back of the neck as a means of controlling an attack of asthma. His experience has demon-

strated that this is one of the most powerful means of acting on the respiration. The patient stoops over, and cold tap water is poured on the back of the neck from a pitcher holding over a gallon, held about two feet above; this is kept up for from half a minute to a minute and a half, or a strong jet of water is applied through a tube from the hydrant. He applies the water thus daily or two or three times a day, when the patient is being systematically treated for asthma, with or without preceding electric light baths. Muck advocates this measure as a means of relief in congested conditions in the nose, and Jurasz to arrest threatening epistaxis.—*Ex.*

1665

A Plea for the Routine Examination of the Nose in all Persons Affected with Asthma. C. E. O'CONNOR, *Queen's Med. Quarterly*, April, 1909.

The writer's cases are classified. 1. Those with marked nasal obstruction; 2. Those without obstruction, but with sensitive areas on turbinals or septum; and 3. Those with infective inflammation in the nasal cavities. The writer has examined eight children suffering from asthma, but none presented abnormalities of nose or throat. Five of these had adenoids, the removal of which gave complete relief in two, and partial (for two years) in a third. The best results were obtained from the removal of hypertrophies of the middle and inferior turbinals.

WISHART.

1669

Atropin in Asthma. P. VON TERRAY, *Med. Klinik*, Jan. 17, 1909.

Perry protests against the general neglect of atropin in treatment of bronchial asthma. As the affection is a neurosis, atropin is theoretically indicated, and he has witnessed excellent results from it in certain cases, although it is by no means a panacea in all cases. In one case he has succeeded not only in arresting the attacks with it, but the patient was improved so that there was no recurrence of the asthma for ten months, although the man had been constantly affected with it for twenty years. Atropin can be advantageously used as a substitute for or to alternate with morphin. He describes the cases of seven patients with severe asthma treated with atropin, the results quite encouraging. He prescribes the atropin in pills containing each 0.0005 gm. (1/20 grain) at first one a day, then after two or three days gradually increasing the total of from four to six pills a day, and then gradually reducing the dosage to one pill a day. The atropin not only arrests an attack, but it seems to prevent recurrence. He never saw any ill effects from this dosage.—*Ex.*

1670

Calomel in Asthma. C. B. F. TIVY, *Brit. Med. Jour.*, Sept. 25, 1909.

Tivy prescribes a powder of calomel, from $\frac{1}{2}$ to 2 grains, according to the habit of the patient, accompanied, of course, by some of the usual anti-spasmodic remedies, and his experience is that relief is rapidly obtained, even before purgation takes place. Other cathartic drugs do not seem to have the same effect, or certainly not so rapidly, and the

ease with which all the powder or tablet is taken is an important factor. —*Ex.*

1673

Behandlung des Stotterns. (Treatment of Stuttering). H. GUTZMANN, *Therapeut. Monatshefte*, Oct., 1909.

Gutzmann is in charge of the university institute at Berlin for treatment of disturbances in speech, and his experience has convinced him of the extreme importance of careful study of the conditions in each individual case, not only the external and internal elements of the speech, but the character, temperament and secondary psychic phenomena, and after careful diagnosis, teaching the patient to imitate the process of normal speech as he practices the elements in turn. To treat stuttering properly, he declares, the physician must be a good internist besides his special training in the nature and phenomena of stuttering. Among the points he has found particularly useful are training the patient to speak in a lower and monotonous tone, without stress on any syllables, the whole speech soft and gentle; when adult stutterers are particularly nervous he gives a little bromid preliminary to the exercises. A child who stutters does not get the training in speaking and expressing his thoughts readily and in reading aloud which other children obtain, so that these children are backward in this respect after the stuttering is conquered. The main trouble in stuttering is in the defective use of the lips, tongue or throat, defective inspiration or expiration, even when the patient is speaking without stuttering. This is one of the reasons why psychotherapy fails—the underlying cause for the trouble has not been removed. Surgical treatment is effectual only in removing mechanical obstacles preliminary to the training of the organs to proper speech. The stutterer's dread and other secondary psychic phenomena subside spontaneously when he learns to control his speech. Gutzmann remarks in regard to quack advertisements that the "guarantee to cure" stuttering may afford a handle for prosecution of the quack as seeking to obtain money under false pretenses. Application of hypnosis to cure stuttering he regards as usually worse than the affection itself; he has frequently encountered cases in which hypnosis had been systematically applied by physicians over a long period without results. Dietetic and general tonic measures are always a powerful aid in the cure of stuttering. —*Ex.*

1674

Behandlung der Neurosen der Stimme und Sprache. (Treatment of Nervous Vocal Disturbance.) H. GUTZMANN, *Med. Klinik*, May 16, 1909.

Gutzmann expatiates on the importance of graphic registration of the movements of the vocal organs for analysis of disturbances in the voice and speech. He has devised a special technic for the purpose. In treatment he has found that vibration of the larynx by means of an electrically driven tuning fork, with the number of vibrations corresponding to the pitch of the voice, is effectual. Graphic registration of the movements of the vocal organs has also thrown new light on the mechanism of stuttering, showing abnormal methods of inspiration and expiration

which can easily be corrected. Especially useful in this respect are Schreber's methods of deep breathing combined with gymnastic exercises. The apparatus for altering the positive and negative pressure in the lungs has also proved useful, the patient being entirely passive, and the inspiration and vacuum produced by the apparatus simulating the natural and normal type of breathing, which the patient thus learns to reproduce.—*Ex.*

1676

A Brief History of the Treatment of Stammering with Some Suggestions as to Modern Methods. G. HUDSON-MAKUEN, *Pa. Med. Jour., Dec., 1909.*

The author discusses various methods which have been employed to cure stammering, and those employed by the various quack institutions which flourish in this country. He then takes up the proper method to be employed in the different classes of cases, emphasizing the fact that stammering, in the majority of instances, cannot be cured in a few weeks, but requires a long course of very careful treatment for its proper relief.

PACKARD.

1677

What May be Done for Exceptional Children by the Training of Speech and the Development of Language. HUDSON-MAKUEN, *Bull. of Am. Acad. of Med., Oct., 1909.*

Speech bears somewhat the same relation to the mind that the hammer and saw bear to the carpenter. It is the mind's most effective and most important tool, being not only the vehicle in which the products of the mind are transferred and delivered, but being essential also the creation of these products, to their crystallization, collection and classification. If a person's speech be trained and perfected his mentality must be greatly improved. Defective speech is both a physical and mental sign of feeble-mindedness, but it is by no means a pathognomonic sign, and it may be a cause and not a result of the feeble-mindedness. Of 5,000 examinations of exceptional persons observation and treatment ranged from several weeks to as many years. The examinations included individual and ancestral histories, and mental and physical investigations. In a series of five cases reported the children were all suffering from arrested speech development with a resulting corresponding arrest of mental development, or an abnormal mental development. In the first four the patients were under treatment for more than a year and the results have been most satisfactory. Only one of the children made any attempt to talk and his speech was a mere jargon. These four are now all talking freely and intelligently and have, moreover, freed themselves entirely from the charge of feeble-mindedness. In the fifth case there has developed some evidence of faulty cerebration. Aside from the direct mechanical means employed for the restoration of hearing the treatment consisted entirely in the training of the faculties of speech. Four other cases reported illustrate what may be done for children who are exceptional on account of certain psychophysical peculiarities, one of the chief symptoms of which is

defective speech, and they also illustrate the fact that speech training is probably the most direct and effective method of developing the human mind. —*Ex.*

1679

Stuttering. E. B. McCREADY, *St. Louis Med. Review*, Aug., 1909.

McCready endorses the so-called melody cure devised by Scripture. —*Ex.*

1684

The Function of the Ear in Deaf Mutes. ALEXANDER, G. AND MACKENZIE, G. W., *Monatsschr. f. Ohrenh.*, Vol. 42, No. 6, 1909.

As the result of numerous tests the authors divide deaf mutes into the following groups:

1. Deaf mutes with complete destruction of both cochlea and semi-circular canals.
2. Deaf mutes with partial destruction of the cochlea, who have some hearing power, and in whom the static apparatus is preserved.
3. Partial destruction of cochlea, with complete loss of static irritability.
4. Complete destruction of cochlea with preservation of static apparatus.

YANKAUER.

1692

The Histology of Hereditary Syphilitic Deafness. MAYER, O., *Arch. f. Ohrenh.*, Vol. 77, No. 3 and 4, 1909.

In hereditary lues specific inflammatory changes in the meninges are common. These may involve the auditory nerve. In this way specific changes are transmitted to the labyrinth.

YANKAUER.

1696

Deaf-Mutism. M. M. STAPLER, *Jour. A. M. A.*, Feb. 6, 1909.

Dr. Stapler gives as the probable mechanism of the production of deaf-mutism by obstruction of the Eustachian tubes (when it is not due to actual destructive labyrinthitis), the fixation of the stapes in the oval window by inward acting pressure on the tympanic membrane. This amounts to a dislocation of the stapes; the stapedius muscle being subjected to extreme tension, becomes paralyzed and the result is deafness, which, occurring in young children, causes deaf-mutism. The reason why we have not been giving hearing to such deaf-mutes heretofore, is that we could not pull the stapes outward and thus reduce the dislocation. Neither inflation nor suction with Politzer's bag will effect this reduction, nor will pulling or punching the tympanic membrane be of any avail. Nature often spontaneously clears the tubes and, as there is considerable freedom of movement in the ossicular chain between the malleus and the incus, the appearances may be apparently normal, the tympanic membrane and the malleus in their proper positions, but the stapes remain immovable and the tones of the stapedius still be lost. It has been repeatedly demonstrated, he says, that when the stapes is put in the right position in these cases, hearing will be restored, and he illustrates a device intended to release the stapes

and give hearing in such patients as have not had the stapes bound too strongly by inflammatory adhesions. Several cases are reported in which this apparatus was used with the result of improving the condition of deaf-mutes of the type referred to.—*Ex.*

1701

The Deaf Child and the Physician. J. D. WRIGHT, *Jour. A. M. A.*, December 25, 1909.

Dr. Wright says that we have to deal with three classes of deaf children: (1) those totally deaf from birth or early infancy, (2) those rendered deaf by accident or disease after speech and some language has been acquired, (3) those partially deaf but with enough hearing to acquire some speech and language through shouting near the ear. The first class must be taught without the aid of the ear. The other two classes must have their speech preserved and improved by careful instruction, and all three must be educated to understand the speech of others by the eye alone or by the eye and ear. A child possessing normal speech even up to eight years of age will lose that speech and become a deaf mute if hearing is lost and careful attention is not at once given to preserve it. The physician should therefore urge the parents to give the matter their immediate attention, as many doctors have observed that lost hearing may be unrecognized even by the parents. The child should be placed under special trained instruction at not later than six years of age; if well-developed and strong, it is better to begin at four and a half or five. The deaf child which has not acquired language at the age of twelve has a bitter and discouraging struggle ahead of it. There is still a difference of opinion as to the advisability of the oral or manual methods, but Wright believes that as good instruction can be given by purely oral means as by the other and it is now used in the majority of cases. He calls attention to several points: "1. The education of the deaf is not a charity any more than the education of your own sons and daughters. 2. All education, and especially the education of the deaf, should be wholly and forever divorced from politics. In too many instances the guidance of institutions for the deaf is entrusted to men of political rather than educational efficiency, and changes in control are made not for the purpose of bettering the school, but for purely political reasons. This is outrageous cruelty to the helpless and dependent child, who innocently suffers for the pride or purse of the politician. 3. The great body of deaf children are bright and normal mentally, and it is unjust to compel the state institutions to include the few abnormal and feeble-minded among the bright ones simply because they are deaf. The feeble-minded deaf should be segregated and taught in schools by themselves as are the hearing feeble-minded. 4. The physician should lend his intelligent aid in placing the deaf child in the school best adapted to his needs." —*Ex.*

1704

Nose Deformities. W. W. CARTER, *Jour. A. M. A.*, Dec. 4, 1909.

Dr. Carter calls attention to the principle of the arch as shown in the nasal bone and redescribes an apparatus devised by him, which he thinks recognizes this principle better than the appliance commonly used, and

is, therefore, better adapted to restore the normal conditions. It was presented a year ago, but he redescribes it as follows: It consists of a fenestrated steel bridge, the wings of which are connected by a hinge and the distance to which they can be separated is regulated by a thumb-screw. The edges of the wings are padded with rubber and the small holes near the edges permit of gauze padding being stitched on. The second part of the instrument consists of two small hard rubber splints perforated by four small holes. The mechanics of the instrument are shown by diagrams and illustrations. The advantages and uses of the instrument as deduced by his experience are stated by him as follows: "1. Cases in which there has been loss of the bony framework of the nose, either from disease or extensive traumatism, are not suitable for this operation. 2. In recent fractures and old traumatic deformities when the tissues have been properly mobilized, this method should yield good results. 3. After a lateral deformity or displacement of the entire nose has been reduced by operation the apparatus should be worn as a retaining splint. For the elasticity of the skin and soft parts tends to restore the former malposition of the organ if it is not so restrained. 4. The passage of sutures from within the nose through the dorsum does not complicate the case. 5. This method of treatment corrects the deformity by reversing the direction of the force that produced it. It also relieves the intranasal deformity, which tends to increase with age and eventually becomes the predominant feature in the case." The respiratory function of the nose is not interfered with after the first two or three days, and the patients do not complain of great discomfort while wearing the apparatus. He says it is better for them to remain in bed during the treatment, but if the bridge is anchored to the forehead by sticking-plaster they may sit up. A number of cases are reported. —E_x.

1707

The Genesis of Deformity of the Septum. KATZ, *Ztschr. f. Laringol., Rhinol. u. ihre Grenzgebiete*, Bd. 2, p. 105, 1909.

Patient, sixteen years old, had complete cleft formation of the hard palate and missing junction of the vomer with the processus palatinus of the upper jaw. The nasal base missing, the left nasal cavity wide. The right nasal base was unusually high and was formed by a coarse tissue arch, probably intra-uterine, which goes from the medial border of the hard palate to the right toward the lower border of the vomer. The right nasal cavity is greatly tightened through a large S-shaped deviation of the septum and a strongly developed crista.

Because this strongly developed septum deformity exists just beside the excessive palate elevation, Dr. Katz concludes that there is a connection between the palatal elevation and the septum deformity, and sees therein a certain proof for his view that the elevation of the palate plays an important role in the formation of the deviation, even if, according to his opinion, the final form of the septum is dependent on the accidental coming together of several factors. —E_d.

1708**Three Demonstrations on Congenital Malformation of the Palate, Face and Neck.**ARTHUR KEITH, *Brit. Med. Jour.*, Aug. 27, 1909.

The author, in a very concise yet complete manner, treats of the various forms of cleft palate and harelip, considering the malformations from an embryological as well as a clinical standpoint, comparing these conditions, found pathologically in man, to a similar development normally occurring in certain of the lower animals. He illustrated the various forms of anomalies with 87 specimens from the museums of the Royal College of Surgeons of England, Medical School of London, and Metropolitan Medical School, explaining their deviation of development from the normal, during the early embryological periods. Among these were cases in all stages of arrest of development, from the simple cleft of the uvula to one extending into the soft palate, hard palate, and still further in the form of the unilateral premaxillary fissure or tripartite, with or without harelip (Part II., No. 2537, August 14, 1909, page 363). In this section he explained in the same manner as in the preceding, recesses and papilli of, and median cleft through, the lower lip and mandible, naso-maxillary clefts, the three forms of clefts of the nose, recesses and congenital perforations of the septum, together with occlusion of the anterior and posterior naris. Of these he was able to demonstrate 20 specimens from the above mentioned museums. The latter half of this addition he devoted to cyclopia with and without proboscis; alone or occurring with agnathia with lateral or ventricular auricles, aprosopus epignath and buccal fissure. (Part III., No. 2336, page 38.) He considers the arrest of development of the bronchial arches and disturbances in closure of the bronchial clefts demonstrating forty-seven cases and specimens, illustrative of the various forms of faulty development of the head, showing cases with all sorts of defects, even to absence of the external auricle, auricular fissure, fistula, appendages and dermoid, cervicle clefts, cysts, developmental thyroid tumors and congenital tumors of the neck, malformation of the tongue and salivary glands. In his classifications of the specimens at hand, he explains that some of the conditions not represented were absent not because of their rarity, but, being of such frequent occurrence, were not deemed worthy of preservation. Therefore his percentage obtained from tabulation can hardly be looked upon as representing their occurrence clinically. The conditions not represented by specimens in the above mentioned museums, because of their infrequency, were lateral nasal clefts, recesses of the nasal septum, occlusion of the posterior naris and papilli and recesses of the lower lip.—*Ex.*

1709**Education of Abnormal Children.** J. K. LOVE, *Glasgow Med. Jour.*, Feb. and April, 1909.

Love discusses the cases of Laura Bridgman and Helen Keller and gives a short study of aphasia with the related conditions of word deafness and word blindness, which not only helps to the understanding of the mechanism of speech, but throws light on the management of a small class of extremely difficult, but also extremely important cases

among backward children, as well as helping in the understanding of the difficulties of the deaf and blind. Love lays down the following general principles:

1. It is useless hammering along a ruined track or along a sound tract toward a ruined center, in the hope of imparting knowledge to a really deaf and blind child. It is better to use a circuitous, though less used route.

2. When the remains of sight and hearing are considerable—when in the deaf they serve for the discovery of vowels, consonants, and words; in the blind, for what under favorable conditions of light, etc., is written on a book or a blackboard—these should be used to the utmost.

3. When a circuitous route is necessary, education should be directed so that Broca's center, the hereditary center for the memory of spoken words, is used.

4. When a boy is clever with his hands and good in his games, when the difficulty is chiefly with his acquisition of language, word-deafness and word-blindness should be sought for.

5. In the teaching of the aphasic child who is not mentally deficient, Broca's convolution on the right side, unless the defect is bilateral, may be made to take up the work of the hereditary speech center of the left side. When failure shows that the defect is probably bilateral, education may proceed by the help of writing, and the manual alphabet.

6. Mentally deficient children offer a different problem to the educator. The great need of the moment is to recognize their limitations.

Having due regard to physiologic indications present, the teacher should be left as free as possible in selecting the method and ordering the education of the abnormal child. The author, however, lays down the following physiologic indications with regard to the education of the orally taught deaf:

- (a) As signs are used very extensively in the education of the hearing child—during his first and second years of life—there is no physiologic reason for suppressing them at the beginning of the school education of the deaf child. They should be used just as they are with hearing children, and excluded, as in the case of the latter, as soon as the more accurate equivalent has been learned.

- (b) During the early years of school life the acquisition of articulate speech should be the chief business of the deaf child. As soon as may be, a vocabulary of common words should be so thoroughly learnt that its use in speech becomes automatic.

- (c) In the education of the deaf, drawing should follow speech and precede writing.

- (d) Until speech has become automatic no finger-spelling should be known to a deaf child. A combined method, in which the combination is that of finger-spelling and speech is, from the physiologic standpoint, to be condemned.

- (e) The difficulty of procuring automatic speech in the deaf-born, while necessarily limiting the use of speech by these children does not mean that it is not worth while teaching them speech. —*Ex.*

1710

Kosmetische Umformung einer Knorpligen Nasendifformität durch Massage. (Massage of the Nose to Correct Deformity.) ORLOWSKI, *Med.*

Klinik, Jan. 24, 1909.

Orlowski reports successful application of massage to correct a cartilaginous deformity of the nose. The massage must be gentle, petrolatum being used copiously; results should not be expected before two or three months. The best results were obtained with what he calls protuberant tip—behind the tip the nose looking as if inflated, the nostrils rigid. —*Ex.*

1711

Facial Deformities. E. S. TALBOT, *Jour. A. M. A.*, March 27, 1909.

Dr. Talbot, in an illustrated article, points out how in the evolution of the race certain structures develop and others are lost for the benefit of the organism as a whole. With the greater development of the brain, other structures of the head, the facial bones, the jaws and teeth especially, decrease in size and recede, making the face more perpendicular. How rapid this change may be is shown by the changes in the cranial and facial character of the African race in the northern States of this country. In the white race the changes in the jaws are shown by the disappearance of the third molar, which Talbot found wanting on one or both sides in one or both jaws in 47 per cent of patients over twenty-five years old. The lateral incisor comes next. It was missing in about 6 per cent of patients. These parts undergoing such rapid changes are structures with transitory characteristics and are more readily involved in disease than others. In the development of men from the primitive cell periods of stress due to readjustment to environment occur, some during development and others during involution. The first period of stress, and the most important one as regards facial and dental development, occurs about the eighteenth week of fetal life. The second occurs after birth, at the time of the development of the first set of teeth. Arrested development of the jaws is usually accompanied with abnormalities also in the nasal bones and mucosa, though neither is as dependant on the other as has been supposed, both being the result of an unstable nervous system; the two conditions go side by side, and the successful treatment of one must have a favorable effect on the other. The perpendicular line is the dividing line between the normal and abnormal facial angle. Deformities of the face, nose, jaws and teeth rarely require treatment, except under conditions where these structures develop inside of the perpendicular line drawn at right angles to a line from the root of the nose to the external auditory meatus. —*Ex.*

1716

Facial Palsy Treated by Faciohypoglossal Anastomosis. C. A. BALLANCE.

Lancet, June 12, 1909.

Ballance reports the case of a young woman of 25 who had complete left facial palsy and unhealed disease of the temporal bone. She gave a family history of phthisis and had herself suffered from hemoptysis.

Six attempts to cure the bone diseased by operation were made, but proved ineffectual. In January, 1906, foul pus was discharging from the left ear. There was complete facial palsy on the left side; the patient suffered from pain in the left ear and from frontal and occipital headache. She was slightly ataxic on the left side. In walking she occasionally tended to deviate, but the direction of deviation was not constant. There was no aërial conduction of hearing on the left side, but bone conduction was still present. There was no optic neuritis, but the left external rectus was weak. The reflexes were normal. The right ear was normal. On January 24, 1906, a radical mastoid operation was performed. Ballance found that the facial nerve had been divided in the descending portion of the Fallopiian canal, the horizontal semi-circular canal had been opened, and there were two other openings into the semi-circular canals as if an attempt had been made to remove them. The antrum had been incompletely exposed and was full of greenish pus. The tegmen tympani was carious and was removed; the dura over it was thickened, but not perforated. On July 4, 1906, there was slight constant left internal strabismus, in addition to complete left facial palsy of peripheral type. On July 10 a nerve-grafting operation was done. An incision was made along the anterior border of the sternomastoid; the posterior belly of the digastric was exposed and divided; the facial nerve was found at the lower part of the parotid and was identified by direct electrical stimulation; the retrahens aurem was the only muscle which responded to the stimulus. The trunk of the facial nerve was followed up to the stylomastoid foramen and divided at its point of emergence. The hypoglossal nerve was divided at the posterior border of the hypoglossus, and the occipital artery was divided between two ligatures so as to set free the nerve. The central end of the hypoglossal nerve was then anastomosed with the peripheral end of the facial. The spinal accessory nerve was next isolated and split longitudinally for about two inches; one-half of the nerve was divided transversely at the distal peripheral end of the slit. The strip of spinal accessory so raised up was united end to end with the peripheral end of the divided hypoglossal. The posterior belly of the digastric was sutured and the wound closed. Six weeks after the operation the left trapezius and sternomastoid muscles and the left side of the tongue were atrophied. When the patient returned 20 months after the operation the nutritional and functional recovery of the facial lingual and cervical muscles was complete. The movements of the face and tongue were dissociated, but when the shoulder was suddenly jerked a wave of muscular contraction was seen to pass from the back of the left side of the tongue toward the tip, so that the movements of the shoulder and tongue are not yet completely dissociated. —*Ex.*

1720

Bismuth Subnitrate Poisoning. E. G. BECK, *Jour. A. M. A.*, Jan. 2, 1909.

Dr. Beck reviews the recent literature of bismuth subnitrate poisoning. The evidence seems to show that the toxic effects are due to the liberation of nitrites in the intestine, the absorption of which causes the methemoglobin to precipitate in the blood. The methemoglobinemia

appears to be the cause of most of the toxic symptoms observed. He sums up his conclusions from his study of the subject as follows: "(1) Bismuth subnitrate administered by stomach in small doses is harmless. (2) In the presence of certain bacteria, or the feces of children, bismuth subnitrates will liberate nitrites, which will be absorbed by the intestines and eliminated by the kidneys; and if the production is faster than the elimination, methemoglobinemia will result. (3) In larger doses by mouth bismuth subnitrate is liable to produce an acute nitrite poisoning characterized by cyanosis, collapse, methemoglobinemia, and may terminate fatally. (4) Rectal injection of bismuth subnitrate may cause nitrite poisoning much quicker and more severe than when the drug is administered by mouth. (5) Children are more susceptible to nitrite poisoning due to administration of bismuth subnitrate. (6) Persons suffering with intestinal putrefaction are very susceptible to nitrite poisoning when taking subnitrate of bismuth internally. (7) After the injection of large quantities of bismuth paste into suppurating sinuses, mild symptoms of nitrite intoxication may appear. (8) The bismuth injected into these sinuses and encapsulated will be gradually absorbed and may be found in the liver, spleen, muscles and intestines. (9) Characteristic symptoms of black borders of gums, ulcerations of mucous membranes, diarrhea, desquamative nephritis, may appear several weeks following the injection of the paste. (10) The acute nitrite poisoning is to be regarded as a distinctly separate affection from the more chronic bismuth absorption. (11) Radiographers should employ some other preparation of bismuth instead of the nitrite, and refrain from injections of subnitrate into the bowels, especially if intestinal putrefaction is present."—*Ex.*

1729

Cough. W. E. BURTON, *Clin. Jour.*, Nov. 10, 1909.

The method referred to by Burton may be briefly described as "discharging" cough without closing the glottis, that is, by maintaining the glottis open from the first stage onward. So that when thus performed cough should consist of (1) a forced but not considerable inspiration made through the nose, the lips being closed; and followed (without closure of the glottis and without pause) by (2) a forced expiration through the mouth. Burton terms this "open" cough.—*Ex.*

1732

Remarks on Recent Surgery of the Upper Air Tract. WALTER F. CHAPPELL, *Dom. Med. Monthly*, July, 1909.

In the submucous operation conservatism should be employed in determining the amount of bone or cartilage to be removed. The Asch operation has been entirely superseded. The operation introduced by Dr. John Mackenty to relieve nasal obstruction due to collapse of the alae nasi, or congenital occlusion by lowering and widening the anterior nares, and allowing the air to enter at a lower level, is highly commended. Thyrotomy possesses the greatest therapeutic significance in the treatment of laryngeal cancer.

WISHART.

1736

Portals of Entry of Tubercle Bacilli. L. COBBETT, *Brit. Med. Jour.*, Sept. 25, 1909.

Cobbett endeavored to find out: 1. Whether or not bacteria can gain entrance to the lungs directly through the air passages. 2. Whether, after being absorbed from some part of the alimentary canal, they can pass at once through the lymph glands and gain entrance to the lungs. The general intention of the experiments was to throw light on the question of the portals of entry of the tubercle bacilli into the human body in the causation of phthisis. The experiments, as a whole, are not yet completed, but they show already that in the guinea pig, bacilli suspended in the air readily pass down the bronchi deeply into the lungs. The experiments are not sufficiently advanced to justify conclusions as to the course of infection which follows the introduction of tubercle bacilli into the alimentary canal. —*Ex.*

1738

Facial Paralysis. H. H. B. CUNNINGHAM, *Brit. Med. Jour.*, Sept. 18, 1909.

Subsequent to chronic otorrhea, Cunningham's patient developed facial paralysis, first on one side, then on the other, at an interval of almost twelve months. A complete postaural operation on both sides was productive of cure. —*Ex.*

1743

Chronic Influenza. F. FRANKE, *Med. Klinik*, Oct. 31, 1909.

Franke ascribes to chronic influenza a number of common ailments which are generally regarded as pure complications and intercurrent affections, but which he thinks are due to the persistence of the influenza infection. The list includes tedious bronchitis, asthma, bone and joint affections, conjunctivitis, neurasthenia and catarrhal affections of various kinds both of the respiratory and gastronomical passages. The recurrence or persistence of influenza is frequently styled "mere cold," but every acute influenza, he affirms, should be regarded and treated as a serious illness and every effort made to cure it completely to prevent its persistence in a chronic form. If in any way possible the patient should stay in bed and not try to fight the infection, particularly if there is much prostration. In nothing else is it so important to refrain from drafts and getting chilled; the body is incredibly sensitive to these factors during influenza infection, more objectively than subjectively. The patients "catch cold" even in dressing, and in some cases every chilling is followed by aggravation of the state of the blood, aspect and general condition. In some cases he has been able to transform the ailing patient completely by housing him in a warm room for three or five months. One of his own children had influenza twice before the age of 2, once followed by paralysis of the legs for three months and attacks resembling angina pectoris, the pulse dropping to 60. The child did not grow robust until he was kept in the house, protected against chilling, for four or five months for two consecutive winters. He warns his influenza patients: "Beware of getting chilled sitting, lying or standing, "but he commends exercise, warmly

clad, in almost any weather. Another peculiar feature of influenza is the extreme sensitiveness of the skin to mechanical injury. Complete rest of body and mind aids materially in the cure of bone and joint and other affections of influenzal organ. Bromids are indispensable in the nervous form, but iron and quinin do not benefit, as the apparent anemia is really a neurasthenic pseudo-anemia; arsenic is the main reliance. He has frequently been amazed at the improvement on a mixture of 5 gm. Fowler's solution, 10 gm. tincture nux vomica and 15 gm. tincture valerian, of which 10 drops are taken in a large glass of water after meals. The dose is increased by one drop until 30 drops are being taken three times during the day. This is kept up for a month or two and then gradually reduced. Very hot, brief baths are less debilitating than other forms of bathing in these cases and help in the toughening process. The raspberry tongue is characteristic of chronic influenza; the papillae on the front of the tongue being red and swollen. A red stripe on the anterior pillars of the fauces is also characteristic during an acute attack and during acute exacerbations. —Ex.

1748

A Contribution to Radiotherapy. D. H. VAN DER GOOT, *Nederl. Tijdschr. v. Geneesk.*, Bd. 1, p. 882, 1909.

The author reports on one hundred and ten cases treated by him within the past five years by means of radiotherapy. Of interest to us are the following:

	No.	Cured.	Improved.	Not improved	Still under treatment.
Epithelioma cutis.....	12	8	.....	2	2
Tuberc. verr-cutis.....	3	3	.....	.....	.....
Lupus vulg.	7	3	2	1	1
Morb. Based.	6	.....	3	2	1
Carc. gloss. phar.....	11	.....	.....	10	1

—Ed.

1755

Scleroma of the Upper Respiratory Tract. J. H. GÜNTZER.

Original contribution to THE LARYNGOSCOPE, p. 457, June, 1909, and *Med. Record*, July 24, 1909.

1761

Mechanical Factors in Cold Taking and Their Therapeutic Interpretation. D. C. HILTON.

Original contribution to THE LARYNGOSCOPE, p. 122, Feb., 1909, and *Med. Herald*, Feb., 1909.

1762

Sensory System of Facial Nerve and Its Symptomatology. J. R. HUNT, *Jour. Nerv. and Ment. Diseases*, June, 1909.

Hunt gives a general survey of the clinical development of the facial nerve from a sensory point of view. That this nerve has a sensory system of importance finds corroboration on many sides. The results of

investigation in the realms of embryology and anatomy find their counterpart in symptomatology and pathology. He believes, therefore, that the seventh nerve should take a definite place as a mixed nerve and should rank with the fifth in symptomatology and nomenclature. This anatomic division of the trigeminal system has proved to be a very practical one, and it has seemed to Hunt that a reconstruction of the facial system along similar lines would have a clinical value. Such a reconstruction would recognize on the proximal side of the ganglion a motor and a sensory root, and on the distal side of the ganglion three branches:

Peripheral Divisions of the Seventh Nerve. (1) The great superficial petrosal with its tympanic branch and connections with Meckel's ganglion; (2) the small superficial petrosal nerve with its tympanic branch and connections with the optic ganglion; (3) the Fallopiian facial, including the motor trunk, the chorda tympani and sensory fibers for the auricle.

Sensory Functions of the Seventh Nerve.—Special sense fibers to the anterior two-thirds of the tongue (chorda tympani). Sensory anastomosis with the termination of the auditory nerve (internal ear). Sensory fibers to the middle ear, mastoid cells, Eustachian tube (deep branches of the petrosal nerves). Sensory fibers to the anterior two-thirds of the tongue (chorda tympani). Sensory fibers to the external ear (emerging with the facial trunk at the stylomastoid foramen).

Sensory Symptoms and Syndromes of the Seventh Nerve.—Pain—Organic Origin: Fallopiian neuritis (third branch); tabetic degenerations (sensory root); herpetic otalgia (geniculate ganglion). Functional Origin: Primary otalgia (tic douloureux of the ear); reflex otalgias. Anesthesias; Hypesthesia of the concha; hypesthesia of the anterior two-thirds of the tongue; ageusia of the anterior two-thirds of the tongue. Reflex: Reflex etiologic factor in the production of reflex facial twitchings and spasms. Syndromes: The herpetic inflammations of the geniculate ganglion; herpes oticus; herpes oticus with facial palsy and acoustic symptoms; herpes facialis and herpes occipito-collaris with seventh palsy and acoustic symptoms.—*Ex.*

1770

Sputum Examinations. A. T. LAIRD, *Jour. A. M. A.*, Jan. 23, 1900.

Dr. Laird offers some suggestions in regard to sputum examination for diagnostic purposes. The main points are a more careful use of terms in describing macroscopic appearances, and certain matters to be noted in the microscopic appearance of the sputum. Under "macroscopic appearance" the specimen is described as watery, mucoid, mucopurulent, purulomucoid, purulent or bloody. If one of the other varieties is simply blood-streaked the fact is noted, but only pure blood is called bloody sputum. In the microscopic examination the presence or absence of tubercle bacilli is noted. Their number is estimated according to the Gaffky scheme and their arrangement is recorded if desired. Under the heading "cells," particular attention is given to squamous epithelial cells and to pus cells (polynuclears). If the former are

present in large numbers they are given preference in the statement of cells present, and if the pus cells are numerous they are accorded first. The presence of small round cells, alveolar cells, and, in appropriately stained cells of eosinophiles, may also be mentioned. Mononuclear cells are rarely in the majority. As regards secondary organisms it is first noted whether they are few or many and then further details may be added. He gives a table showing how in a series of 541 cases there was a natural grouping into four types, the last of which, the mucopurulent with numerous pus cells, he calls the "bronchial type," and says it is desirable to obtain such to determine the presence or not of tubercle bacilli or organisms causing mixed infection. The tubercle bacilli may be occasionally found in the watery or mucoid type or the purulomucoid with predominating squamous cells, which are usually derived from the mouth or throat, but no inferences as to mixed infection should be drawn from the examination of such specimens. — *Ex.*

1788

Researches Regrading the Treponema Palladium for the Diagnosis of Otolaryngol Diseases. A. NIEDDU, *Arch. ital di Otol., Rhinol. and Laryngol.*, No. 1 and 2, 1909.

Dr. Nieddu has made two series of experiments. In one he has sought for the treponema with the coloring of giemsa in syphilitic lesions of the three periods of different parts of the body. In the other he has examined lesions of the three periods of the nose, throat and ears. He has been able to conclude: That the research of the treponema has great diagnostic importance in the first and second period in the manifestations of the nose, throat and ears as of any other part of the body. It has no importance, however, in the third period. LASAGNA.

1792

A New Process of Inhalation. A. PERI, *Arch. Ital. di Otol., etc.*, July 1, 1909.

Dr. Peri relates the experience which he has had in Sestri Ponente with the apparatus constructed by the Societa anonima Italiana, after the model of the Koertling dry inhalator in use in Kösen. Because of the experience which he has had with acute and chronic catarrh of the nose, pharynx and trachea, in chronic bronchitis, in the most varied lymphatic ailments of children, as well as in arterio-sclerosis, and in intestinal stomach troubles, the author becomes convinced that the Koertling system is the most complete and effective in existence.

1799

Embryology of Face and Neck. A. SCHWYER, *St. Paul Med. Record*, April, 1909.

Schwyrer describes the embryology of the face and neck and traces its influence in the formation of nasal furrows and clefts, harelip, transverse cleft through the cheek, median cleft of the lower lip and eventually of the lower jaw, the formation of diverticula, fistulas and cysts of the neck and pharynx, etc. — *Ex.*

1801**Zur Therapie des Keuchhustens. (Treatment of Whooping Cough.)**

SENFLEEN, *Deutsche Med. Wchnschr.*, Jan. 14, 1909.

Senfleben thinks that quinin and antipyrin can be depended on to abort or attenuate pertussis, but that, as usually given, the dislike of the child to take medicine leads to inadequate dosage or to its total neglect. This can be obviated by injecting a solution of the drug into the rectum. The solubility of the antipyrin commends it for the purpose, and he has 1 gm. (15 grains) dissolved in 25 gm. warm water, injected three times a day, for a child over twelve, with smaller doses for younger children. He has never noticed any ill effects on the heart, while, when the injections are commenced early, the disease is frequently aborted. It does not depress the appetite given in this way, and the therapeutic effect seems to be constant and reliable. —*Ex.*

1809**Atypical Forms of the Mikulicz's Disease.** SOUQUES and CHENE. *Soc.*

Méd des Hôpitaux de Paris, Feb. 26, 1909.

The case reported is that of an eighty-two-year-old man who, from infancy, or perhaps even from birth, suffered from a symmetrical swelling of the salivary glands, the parotids and the submaxillæ on both sides. This hypertrophy is not accompanied with pain. The lachryman glands are normal. No dietary cause for these symptoms can be discovered. The doctor holds, however, that this is an atypical and undeveloped form of Mikulicz's disease, in spite of the integrity of the lachrymal glands.

—*Ed.*

